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A Summary of Current Programs, 10/1/62 207 1, 1962 -
and Preliminary Report of Progress
for 10/1/60 to 9/30/62

ECONOMIC AND STATISTICAL ANALYSIS DIVISION
of the
ECONOMIC RESEARCH SERVICE,
UNITED STATES DEPARTMENT OF AGRICULTURE,

This progress report of U.S.D.A. and cooperative research is primarily a tool for use of scientists and administrators in program coordination, development and evaluation; and for use of advisory committees in program review and development of recommendations for future research programs.

There is included under each problem area in the report a brief and very general statement on the nature of the research being conducted by the State Agricultural Experiment Stations and the professional manpower being devoted by the State stations to such research. Also included is a brief description of related work conducted by private organizations. No details on progress of State station or industry research are included except as such work is cooperative with U.S.D.A.

The summaries of progress on U.S.D.A. and cooperative research include some tentative results that have not been tested sufficiently to justify general release. Such findings, when adequately confirmed will be released promptly through established channels. Because of this, the report is not intended for publication and should not be referred to in literature citations. Copies are distributed only to members of Department staff, advisory committee members and others having a special interest in the development of public agricultural research programs.

This report also includes a list of publications reporting results of U.S.D.A. and cooperative research issued between October 1, 1960, and September 30, 1962. Current economic and statistical research findings are also published in the Outlook and Situation Reports, Agricultural Economics Research, and The Farm Index. This progress report was compiled in the Economic and Statistical Analysis Division, Economic Research Service, U. S. Department of Agriculture, Washington 25, D. C.

UNITED STATES DEPARTMENT OF AGRICULTURE
Washington, D. C.
October 1, 1962

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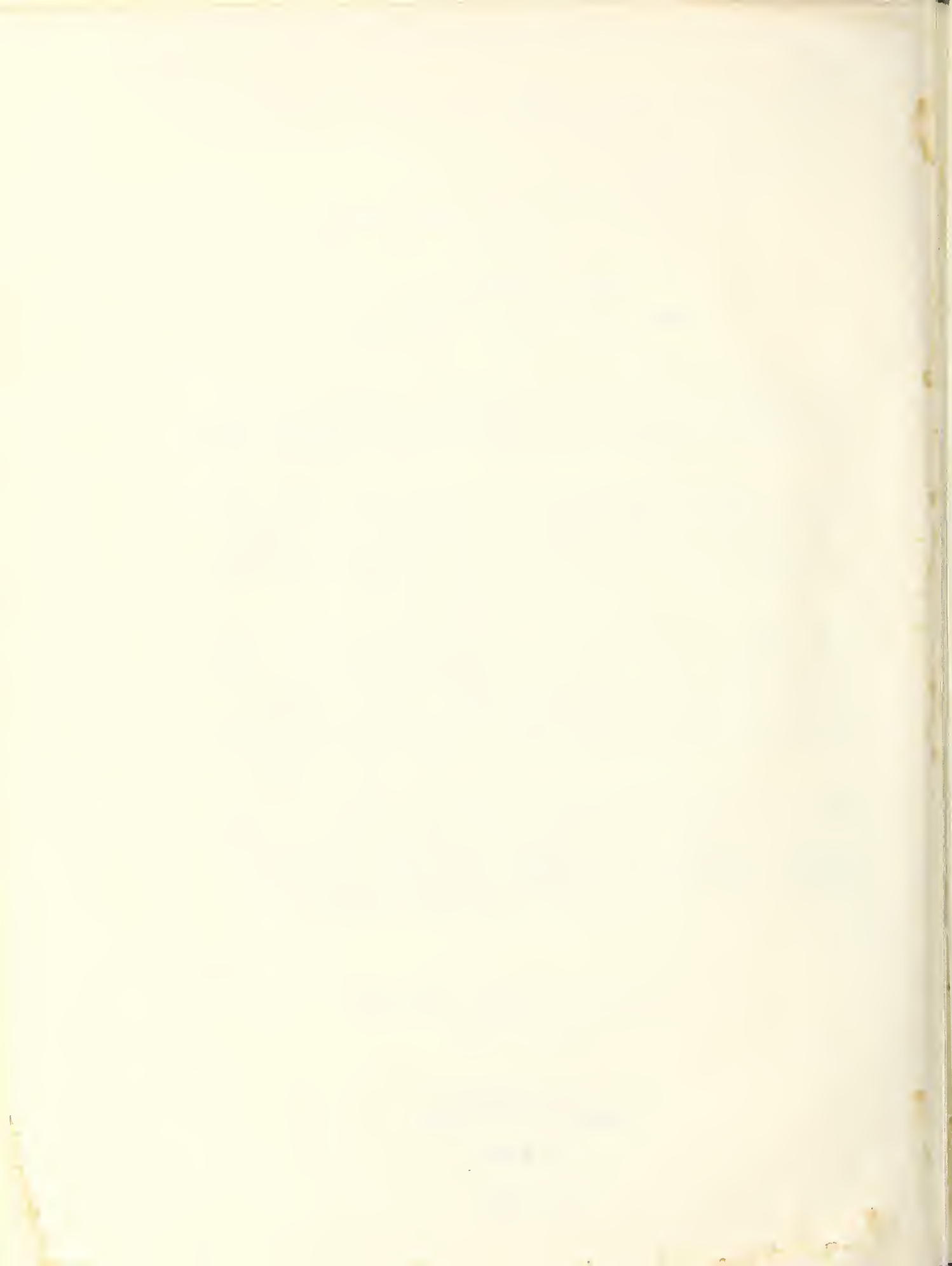


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INTRODUCTION

The Economic and Statistical Analysis Division is one of the three research Divisions of the Economic Research Service concerned with domestic and foreign economic analysis. This Division has the responsibility for the domestic economic analysis. This includes research directed toward (1) the identification and measurement of relationships among the factors affecting the demand, supply, and price of agricultural commodities; (2) identification and measurement of broad relationships between the farm economy and the national economy; (3) measurement and analysis of farm income and income of farm population; (4) measurement and analysis of demand for and consumption of food and other farm products; (5) long-run projections of economic growth and the demand for farm products; (6) measurement and analyses relating to population, farm manpower, levels of living, diffusion of information, adoption of farm practices, goals, values and decision making, and other rural problems and trends; and (7) historical research relating to major developments in farming and major changes in policies, programs, and organizations of the Department.

Development and improvement of statistical data and development, adaptation, and application of new and improved methods and techniques of statistical analysis are integral parts of this process.

This research provides the information that underlies the appraisals of the current and prospective economic situation for agriculture and for agricultural commodities which are the heart of the outlook work. It also provides the information required for analyses of the probable effects of alternative programs and the measurement of the effects of actual programs.

The Development and Trade Analysis Division and the Regional Analysis Division are responsible for foreign economic analysis. Research in the economic problems of agricultural production is the responsibility of the Farm Economics Division. The Marketing Economics Division is responsible for research in all aspects of the economics of the marketing of farm products.

In this report, economic and statistical analysis research is reported under the six area headings shown in the table of contents. For each area a description of the current research program is provided. This includes research under cooperative agreements. A preliminary report of progress and a list of publications is given for each area for the period October 1, 1960 through September 30, 1962. Brief descriptions of related research programs of the State Experiment Stations and of industry and other organizations based on a study made in 1961 are included. The research effort in the Economic and Statistical Analysis Division amounts to approximately 74 professional man-years.

Following are some of the recent research accomplishments of the Economic and Statistical Analysis Division.

The serious economic problem of sharply fluctuating farm prices and income resulting from a highly inelastic demand and variations in output, and the problem of general overproduction, which tends to depress the average level

of prices and income are delineated in a report entitled, An Economic Study of the United States Potato Industry, Agricultural Economics Report No. 6. Per capita consumption of potatoes, after declining for 40 or more years, leveled off in the 1950's, with increased processing and stepped-up merchandising of both fresh and processed products. Several possible approaches are presented for achieving more stable and more equitable prices and income to growers in the future.

A special study was made of cigar tobacco to determine the effect on the cigar industry and tobacco farmers if supplies of Cuban tobacco were to be cut off. It was indicated that Cuban tobacco accounted for about one-fourth of the cigar tobacco supply in the United States and about two-thirds of the cigars produced in this country would be affected if imports from Cuba were discontinued. At that time it appeared that stocks of Cuban tobacco could be stretched over several years. An embargo, effective February 1962, was placed on Cuban tobacco.

A bulletin which describes the major economic relationships that affect the price and supply of hogs has been sent to press. Hog production and prices have fluctuated through two fairly regular cycles since 1953. The bulletin develops an explanation of these cycles and measures the relative effect of various factors such as prices of feed, beef and poultry; and consumer income on the hog economy. The study indicates that a 10-percent increase in the October-December corn price results in a 2-percent decrease in farrowings the following year. A similar increase in beef prices decreases farrowings by 1 percent. A 10-percent increase in the October-December hog price is associated, on the average, with a 4-percent increase in farrowings the following year. The study also indicates that the amount of seasonal variation in the hog industry has gradually decreased during the last 10 years because of changes in feeding and production practices.

Another study develops estimates of final domestic textile consumption in the United States and identifies the major economic factors affecting variations in fiber consumption. The level of real disposable consumer income and year-to-year changes in the level of income and prices of textile fibers were found to be major economic factors affecting the domestic consumption of fibers. These factors explain about 90 percent of the variation in consumption.

A 20-equation model for the feed-livestock economy recently published by G.E. Brandow of Pennsylvania State University in The Interrelations Among Demand for Farm Products and Implications for Control of Market Supply has been modified to make it applicable to the making of price, supply and consumption forecasts and the economic appraisal of alternative programs. The modifications include the use of a more recent base period and allowance for changes in trends in consumption and price for commodities which seem to be exhibiting different trends than they were when the model was originally formulated.

An article was published which discussed the relative merits of several methods of estimating seasonal variation. Methods based on moving averages had the disadvantage of possibly introducing a fictitious seasonal pattern; harmonic analysis overcomes this disadvantage. The method was applied to seasonal variation in hog production.

Estimates of income of the farm population were published on a personal income basis. Personal income of the farm population includes income from both farm and nonfarm sources and thus represents the total flow of income to persons on farms from all sources. These personal income estimates for the farm population will permit direct comparisons with the personal income estimates published regularly by the Department of Commerce in the national income series. Revised estimates of the total farm population resulting from the use of the new and more restrictive definition of farm population adopted in 1960 were used in preparing estimates of the per capita personal income of the farm population. These estimates of per capita income on a personal income basis represent a comprehensive measure of the ability of the farm population to participate in the Nation's rising level of living.

A research paper exploring a new concept of parity income was published in the October issue of Agricultural Economics Research. This paper examines the implications of defining parity income as the income that would yield returns to the capital and labor engaged in agriculture equal to those earned by similar resources in the nonfarm segment of the economy. Primary attention was directed to commercial farms for which the value of farm products sold was \$5,000 or more.

A first draft report--Preliminary 5-Year Projections for Agriculture--projects an increase of around one-tenth in the domestic market for farm products from 1961-1967. This is slightly less than the increase in population. Projected requirements and output under current domestic and export programs point to a continued liquidation of stocks of grains and a rise in net farm income. Projections published in Part III of Food and Agriculture--A Program for the 1960's estimates a potential increase of one-fourth in crop output from 1961-1967, but an increase of only about 10 percent in the demand for farm products.

The Centennial History of the Department was completed during the period under review. The response of the Department to changing conditions--national and international, scientific and economic--is the theme of the volume.

In 1960 a new and more restrictive definition of the farm population was adopted. Use of the new definition excluded about 5 million people from the farm population. After considerable research, a revised annual series of estimates was prepared beginning with the year 1941. The revised estimates show the farm population declining from 30.5 million in 1940 to 15.6 million in 1960 compared with a decline from 30.5 to 20.5 under the old series.

A book entitled, Economic Areas of the United States, was published as a culmination of work in the area of description of State economic areas. The book includes descriptions and photographs of the characteristics of each of the State economic areas, sub-regions and regions that have been used as statistical units in reports of the censuses of agriculture, population and housing and of the Department of Agriculture. It presents pertinent statistical data for each area and discusses the use of the system of economic areas in analytical work.

Data from the 1959 Census of Agriculture were used in the development of a new formula for the computation of farm operator level of living indexes for 1950 and 1959. In both of these years, counties in the West had the highest level of living indexes and counties in the South had the lowest.

AREA NO. 1. COMMODITY SITUATION AND OUTLOOK ANALYSIS

Problem. Due to the instability of the prices he receives and rapidly changing conditions of agricultural production, the farmer stands in special need of accurate appraisals of his economic prospects if he is to plan and carry out his production and marketing activities in an efficient and profitable way. The typical farmer cannot afford to collect and analyze all the necessary statistical and economic information for himself. It has long been a goal of the Department to provide the farmer with economic facts and interpretations comparable to those available to business and industry, through a continuous flow of current outlook intelligence; the development of longer range projections of the economic prospects for the principal agricultural commodities; and analyses of the economic implications of program proposals affecting the principal farm commodities.

USDA PROGRAM

This includes the regular publication of 12 commodity outlook reports; the holding of the Annual Outlook Conference in Washington in mid-November; participation of outlook specialists at regional or State outlook meetings or at meetings of farm organizations and agricultural industry groups; preparation and publication of special articles bearing on both the short-run and long-run outlook for farm commodities; issuance of comprehensive statistical bulletins containing the principal economic series pertaining to the various commodities; long-range projections of the demand for the major agricultural commodities; and continuing analysis of the impact of various alternative farm program proposals as they affect output and prices of these commodities.

The total commodity situation and outlook program currently involves 24 professional man-years.

(a) Livestock and Meat. This work involves 3.0 professional man-years in Washington and 2.0 professional man-years in Denver, Colorado. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation of livestock and meats. These appraisals are published 7 times a year in the Livestock and Meat Situation, quarterly in the Demand and Price Situation, and the National Food Situation. A comprehensive analysis of the livestock situation is presented at the Annual Outlook Conference. Outlook appraisals are frequently presented at regional or State outlook meetings, at meetings of farm organizations, and to various agricultural industry groups. Special analyses are prepared from time to time on the probable effect of proposed programs on the price, supply and consumption of livestock and livestock products. Basic statistical series are maintained, improved and published for general use in statistical and economic analysis. A Statistical Handbook, Livestock and Meat Statistics is published annually.

A Western Regional Field Office in Denver, Colorado, conducts a continuing appraisal of the conditions important to the range livestock industry of the West. The results of this activity are published monthly in the Western Livestock Round-Up, supplemented by special releases and special materials circulated to the Extension Marketing Specialists of the Western Region.

(b) Fats and Oils. This work involves 2.0 professional man-years in Washington. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation of fats, oils, and oilseeds. These appraisals are published 5 times a year in the Fats and Oils Situation, quarterly in the Demand and Price Situation, and the National Food Situation. A comprehensive analysis of the fats and oils situation is presented at the Annual Outlook Conference. Special analyses are prepared from time to time on the probable effect of proposed programs on the price, supply, and consumption of fats and oils and their products. Basic statistical series are maintained, improved and published for general use in statistical and economic analysis. A Statistical Handbook, Oilseeds, Fats and Oils, and Their Products, is published about every 5 years.

Recent emphasis has been on the significance of increased fat output and the export markets on prices and incomes received by farmers.

(c) Dairy. This work involves 1.0 professional man-years in Washington. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation of milk and milk products. These quarterly appraisals are published 6 times a year in the Dairy Situation, quarterly in the Demand and Price Situation, and the National Food Situation. A comprehensive analysis of the dairy situation is presented at the Annual Outlook Conference. Outlook appraisals are frequently presented at regional or State outlook meetings, at meetings of farm organizations, and to various agricultural industry groups. Special analyses are made from time to time on the probable effect of proposed programs on the production-utilization balance of milk and milk products. Basic statistical series are maintained, improved and published for general uses in statistical and economic analysis.

(d) Poultry. This work involves 2.0 professional man-years in Washington. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation for poultry and eggs. Appraisals are published regularly in the Poultry and Egg Situation, the Demand and Price Situation, and the National Food Situation. A comprehensive analysis of the poultry and egg situation is presented at the Annual Outlook Conference. Outlook appraisals are also frequently presented at regional or State outlook meetings, at meetings of farm organizations and to various agricultural industry groups. Special analyses are prepared from time to time on the probable effect of proposed programs on the price, supply and consumption of poultry and poultry products. Basic statistical series are developed, maintained, improved and published for general use in statistical and economic analysis. As a part of this program, a comprehensive bulletin, entitled Egg and Poultry Statistics, was released in March 1962. Returns from producing eggs, broilers, and turkeys are subject to wide fluctuations which made an effective outlook service for producers of these commodities imperative.

(e) Feed. This work involves 2.0 professional man-years in Washington. The outlook and situation program for feed provides a continuing appraisal of the current and prospective economic situation for feed grains, byproduct feeds and forages. These appraisals are published 6 times a year in the Feed Situation and quarterly in the Demand and Price Situation. An appraisal of the food use of feed grains is prepared quarterly for the National Food Situation. A comprehensive analysis of the feed situation is presented at

the Annual Outlook Conference. Outlook appraisals also are presented at regional outlook meetings and at meetings of farm organizations and various agricultural industry groups. Special analyses are prepared of the probable effect of current and proposed longer term feed grain programs on prices, supply, utilization and carryover of feed grains. Special attention is being given to the effect of such programs on the feed grain production-utilization balance. The failure of utilization to keep pace with production has been a major agricultural problem and will continue to require special attention in the years ahead. Basic statistical series covering feed grains, high-protein and other byproduct feeds, commercially prepared livestock feeds, and forages are maintained, improved and published for use in statistical and economic analysis. A Statistical Handbook, Grain and Feed Statistics, is published annually.

(f) Food Grains. This work involves 2.0 professional man-years in Washington. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation of food grains, which includes wheat, rye, rice, and their products. The appraisals are published 5 times a year in the Wheat Situation, annually in the Rice Situation, and quarterly in the Demand and Price Situation and the National Food Situation. Outlook appraisals are presented at the Annual Outlook Conference, at meetings of farm organizations and to agricultural industry groups. Special analyses are prepared from time to time on the probable effect of proposed programs on the price, supply and consumption of food grains. Basic statistical series are maintained and improved and are published annually in Grain and Feed Statistics.

(g) Citrus Fruits. This work involves 0.5 professional man-years in Washington. The outlook and situation program involves continuous appraisal of the current and prospective economic situation of citrus fruits. The regular appraisals are supplemented by special analyses when needed. Results of these appraisals, findings of special analyses, and long-time series of basic data are published in the Fruit Situation, issued 4 times a year, and in brief reviews in quarterly issues of the National Food Situation and the Demand and Price Situation. A comprehensive analysis of the citrus fruits situation is presented at the Annual Outlook Conference. Outlook presentations are also made at regional or State outlook meetings, meetings of farm organizations, and to various agricultural industry groups. Special studies are made from time to time to determine probable effect of proposed programs on supply, price and consumption of citrus fruits. Basic statistical series on stocks, foreign trade, consumption, and price are compiled, improved and maintained for general use in statistical and economic analysis.

(h) Deciduous Fruits and Tree Nuts. This work involves 1.0 professional man-years in Washington. The outlook and situation program involves a continuing appraisal of the current and prospective economic situation for deciduous fruits and tree nuts. Results of these appraisals, findings of special studies, and long-time series of basic data are published in the Fruit Situation, issued 4 times a year, and in brief reviews in quarterly issues of the National Food Situation and the Demand and Price Situation. A comprehensive analysis of the deciduous fruits and tree nuts situation is presented at the Annual Outlook Conference. Outlook presentations also are made at regional or State outlook meetings, meetings of farm organizations,

and to various agricultural industry groups. Special studies are made from time to time to determine probable effect of proposed programs on supply, price and consumption of these commodities. Basic statistical series on stocks, foreign trade, consumption, and price are compiled, improved and maintained for general use in statistical and economic analysis.

(i) Potatoes. This work involves 0.5 professional man-years in Washington. The outlook and situation program involves a continuing appraisal of the current and prospective economic situation of potatoes. Results of these appraisals, findings of special studies, and long-time series of basic data are published in quarterly issues of the Vegetable Situation, the National Food Situation, and the Demand and Price Situation. A comprehensive analysis of the potato situation is presented at the Annual Outlook Conference. Outlook presentations also are made at regional or State outlook meetings, meetings of farm organizations, and to various agricultural industry groups. Special studies are made from time to time to determine probable effect of proposed programs on supply, price and consumption of potatoes. Basic statistical series are compiled, improved and maintained for use in statistical and economic analysis.

(j) Vegetables. This work involves 1.5 professional man-years in Washington. The outlook and situation program involves a continuing appraisal of the current and prospective economic situation of fresh and processed vegetables. Results of these appraisals, findings of special studies, and long-time series of basic data are published in quarterly issues of the Vegetable Situation, the National Food Situation, and the Demand and Price Situation. A comprehensive analysis of the vegetable situation is presented at the Annual Outlook Conference. Outlook presentations also are made at regional or State outlook meetings, meetings of farm organizations, and to various agricultural industry groups. Special studies are made from time to time to determine probable effect of proposed programs on supply, price and consumption of vegetables. Basic statistical series are compiled, improved and maintained for use in statistical and economic analysis.

(k) Cotton and Manmade Fibers. This work involves 1.5 professional man-years in Washington. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation for cotton. These appraisals are published 6 times a year in the Cotton Situation and quarterly in the Demand and Price Situation. A comprehensive analysis of the cotton and manmade fibers situation is presented at the Annual Outlook Conference. Outlook appraisals are frequently presented at regional or State outlook meetings, at meetings of farm organizations, and to various agricultural industry groups. Special analyses are prepared on the probable effect of proposed programs on the price, supply and consumption of cotton and manmade fibers and textile products. Basic statistical series are developed, maintained, improved, and published for general use in statistical and economic analysis. New statistical series developed in the recent past include the fiber equivalent of U. S. foreign trade in textiles on a monthly basis. Statistical Handbook, Statistics on Cotton and Related Data, is published annually. Recent emphasis has been on the analysis of the economic factors which affect the consumption of cotton; fibers used in textile manufactures entering U. S. foreign trade;

development of alternative cotton programs; revisions and updating of data on the use of fibers by the military forces; and price and utilization of U. S. cotton in both domestic and foreign markets.

(1) Wool. This work involves 1.5 professional man-years in Washington. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation of wool and other animal fibers. These appraisals are published four times a year in the Wool Situation and quarterly in the Demand and Price Situation. Outlook appraisals are presented at regional or State outlook meetings, at meetings of farm organizations, and to various industry groups. Special analyses are prepared from time to time on the probable effect of proposed programs on the price, supply, and consumption of wool and wool textile products. Basic statistical series are developed, maintained, improved, and published for general use in statistical and economic analysis. New statistical series developed in recent past include the fiber equivalent of U. S. foreign trade in wool textiles and domestic consumption of wool in the United States as distinguished from U. S. mill consumption. A Statistical Handbook, Wool Statistics and Related Data, is published annually. Recent emphasis has been on the analysis of the economic factors which affect consumption of wool; fiber equivalents of wool textile manufactures entering U. S. foreign trade; interagency committees dealing with international as well as national problems dealing with imports and duties; and price and utilization studies.

(m) Tobacco. This work involves 1.5 professional man-years in Washington. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation of tobacco and tobacco products. Results of these analyses are published quarterly in the Tobacco Situation and in the Demand and Price Situation. A comprehensive analysis of the tobacco situation is presented at the Annual Outlook Conference. Appraisals of the current situation and outlook are presented at regional meetings and at meetings of tobacco grower organizations and trade groups. Special analyses are prepared from time to time on the probable effect of alternative proposed programs on the price, supply, consumption and exports of tobacco. Basic statistical series are developed, improved, maintained, and published for general use in statistical and economic analysis. Recent emphasis has been placed on analyses of consumption of various kinds of tobacco in final products, and factors affecting exports of tobacco leaf.

RELATED PROGRAMS OF STATE EXPERIMENT STATIONS AND INDUSTRY

Research of State experiment stations in this area is not reported separately but is included with research reported under related areas.

A substantial number of private organizations--including manufacturers of food and fiber products, private commodity analysts, banks, and investment houses--are engaged in commodity outlook work similar to that carried on by USDA. This work, however, frequently relates to shorter time periods than those covered by the Department's outlook appraisals; is predominately for private use; and not available to the public. Furthermore, much of the work of the private organizations is heavily dependent on the regular USDA

outlook reports and the related statistical material. It is on the whole supplementary to that of the Department, rather than of a competitive or substitute nature. It has been estimated that this type of work in industry and other private organizations may total as much as 200 professional man-years.

REPORT OF PROGRESS FOR USDA AND COOPERATIVE PROGRAMS

A. Livestock and Meat

The downward trend in beef prices that started in May 1959 came to an end in 1962. The increase in beef production this year was not sufficient to keep pace with the increase in demand, and fed steer prices reached the highest level in four years. Beef production is expected to increase in 1963 but not sufficiently to weaken prices. Relatively stable levels of pork production the past three years have been accompanied by gradually improving prices. Pork supplies in 1963 are likely to increase sufficiently to reduce prices slightly from this year's level. The liquidation of sheep and lamb numbers (a situation that started in 1960) ended in the first quarter of this year followed by improved prices for this year's lamb crop. Decreased lamb and mutton production is in prospect for 1963 with prices improved over this year.

A shift in the seasonal pattern of prices for several livestock commodities appears to have occurred in the mid-fifties. Current work includes an analysis of between 110 and 120 seasonal patterns of prices and production for various classes and grades of livestock and livestock products. Other work in progress is an analysis of the regional distribution of livestock production and the role of temperature on consumption of meat.

B. Fats and Oils

Supplies of food fats and oils during the 1961-62 marketing year totaled a record 15.9 billion pounds (in terms of oil), about 14 percent greater than the year earlier. Total disappearance rose around 11 percent to a new high with record exports accounting for virtually all of the increase, as the Food for Peace Program continued to play an important role. But supplies were much larger than total disappearance and a sharp increase in carryover stocks occurred. Most of the increase is attributed to soybeans and butter. Prices received by farmers for 1961 oil-bearing crops averaged slightly above the year before, primarily reflecting higher CCC support levels. Wholesale prices of all fats and oils averaged a little below year earlier levels but oilseed meal prices were somewhat higher.

In addition to the regular analytic work and outlook analyses, considerable time was devoted toward improving statistical techniques used in forecasting and the development of new statistical series. Greater attention was given to our expanding foreign markets and the minor oilseed crops. A special study was made on the planting of minor oilseed crops on diverted acres in 1963. Long-run projections (5 years, by years) are being developed for the food fats and oils as part of a set of ERS projections for the farm economy as a whole. The March 1962 issue of the Fats and Oils Situation marked the 25th anniversary of the publication of this report.

C. Dairy

Milk production rose significantly in 1961, reflecting two successive increases in the level of price supports and a sliding-off in beef prices from the 1959 level. In 1962 the rate of increase slowed and was reversed for several months due to poor pasture conditions and a drop in price supports. Consumption of dairy products from commercial outlets was significantly lower than in 1960 in both 1961 and 1962. This decline in commercial consumption, together with the higher production, led to sharply higher Government purchases for price support and sharply higher Government donations of butter and nonfat dry milk to institutions and needy persons. Stocks of butter and nonfat dry milk in Government hands rose very high, and, though pushed with vigor, disposal, particularly of butter, fell steadily behind acquisitions.

In the August 1962 Dairy Situation, a mid-year analysis of the 1962 production and utilization of milk was made in order to afford the dairy industry an early comprehensive view of conditions. The analysis indicated that the commercial market for manufactured dairy products was lagging behind 1961, because the industry was carrying stocks at lower levels than a year earlier, and because consumption of manufactured dairy products had fallen. The decline in the commercial market for dairy products contributed more than increased milk production to the rise in CCC purchases.

The reversal of the 1960-61 rise in milk production was appraised in the same issue. The analysis indicated that milk production is likely to turn upward again in late 1962.

The mounting surplus of dairy products led to several special analyses, published as special articles in the Dairy Situation. These include an analysis of CCC expenditures for dairy price support, which indicated the sharply rising costs of dairy price supports in 1962 and analyzed the causes of the rise. With acquisitions exceeding disposals, it became evident that the industry needed more information on disposal problems, so the disposition of dairy products under P. L. 480 was analyzed in the June 1962 Dairy Situation, and an analysis was made of the movement of dairy products into consumption through the experimental Food Stamp Plan. This latter study indicated that the Food Stamp Plan would tend to increase consumption of the higher-valued dairy products but decrease consumption of butter and nonfat dry milk.

In 1962, Dairy Statistics through 1960, Statistical Bulletin No. 303, was published, bringing to date the former statistical bulletin in this series and adding new series, particularly on the Federal Market Order Program. This bulletin brings together from many sources a collection of economic statistics relating to the dairy industry, including most of the series in frequent use.

The increase among States in the regulation of dairy product prices led to a survey of State agencies concerned with regulating fluid milk pricing and a study of State laws to revise and extend work done in 1957 and 1959. Findings were brought together in a concise and comprehensive statement of the power and activities of States in regulating fluid milk prices. Together with a summary of Federal regulations, this was published both as a special article in the Dairy Situation, and as an ERS report.

D. Poultry and Eggs

A huge expansion in broiler and turkey production in 1961 resulted in greatly depressed prices and a record large carryover of frozen turkeys into 1962. Broiler prices dropped to record low levels and turkey prices were the lowest point since the early 1940's. In addition egg prices in the fall of 1962 failed to show the usual seasonal advance and remained much below the year earlier through early 1962. As a result of these developments, adjustments making for a reduced output of all of these commodities began in late 1961 and the first half of 1962. These are leading to about a 15 percent cut in turkeys raised in 1962, somewhat smaller broiler production in 1962 through October, and egg production back down to year earlier levels by the last quarter of 1962. However, broiler prices much above the 1961 level in June through September have triggered a huge expansion in chick output which will boost broiler marketings in late 1962 much above the year before and greatly depress prices from present levels.

In 1961 and early 1962, attention was focused on the factors that had led to the overproduction and low prices of 1961. In addition, many of the important long-term trends bringing about changes in the demand and supply of poultry and eggs were analyzed in considerable detail. This emphasis was partly to provide necessary background material for the advisory committees and others who were considering what steps might be taken to stabilize poultry and egg prices.

In the March issue of the Poultry and Egg Situation, a comprehensive analysis of the probable impact of the new Common Market trade regulations on the rapidly growing U. S. poultry exports was presented. U. S. poultry exports increased almost 5-fold between 1958 and 1961. About three-fourths of the increase has been to Western Europe, mainly to West Germany. Higher hurdles will confront U. S. poultry exports to the European Economic Community during the current fiscal year.

E. Feed

Feed grain supplies declined 8 percent from 1960-61 to 1962-63, following nearly a decade of steadily increasing supplies. The smaller supplies resulted largely from a reduction in feed grain acreage through participation by farmers in the Government Feed Grain Program. Feed grain production in 1961 was reduced below utilization for the first time in 10 years and carryover stocks into 1962-63 were reduced to about 73 million tons, 12 million below carryover into 1961-62. Both domestic use and exports of feed grains reached new record-high levels in 1961-62, reflecting a good demand in this country and abroad. Demand for feed grains is expected to continue strong and the 1962 crop is expected to again fall below consumption, resulting in a further reduction in carryover stocks at the close of the 1962-63 marketing year.

During the past year, special attention has been given to factors affecting the consumption of feed grains and to the problem of reducing surplus feed grain stocks. This has included work with the Secretary's Office and with other agencies of the Department in analyzing the effects of various types of Government programs on feed grain production, prices, utilization, and carryover. An analysis was made of the effect of Government programs on

exports of feed grains as part of a special study, Analysis of Grain Export Programs, prepared by a technical committee of the Department. The annual Statistical Handbook, Grain and Feed Statistics, was published in June 1962. This issue carried long-term series and was expanded to include additional data on price support programs, and foreign trade.

Analyses of feed grain consumption revealed that the low price of feed grains in relation to the cost of other items going into livestock production, as well as in relation to livestock prices, has been important in influencing feed consumption in recent years. The moderate increase in the number of grain consuming livestock also contributed to increased feed requirements. A study on sales of feed grains by farmers revealed that farmers now sell about 45 percent of the feed grains they produce, compared with only about 25 percent in the late 1930's. Much of the increase in feed grain production during this period has been sold. Studies on the high-protein feed situation revealed that soybean meal continues to increase in importance as a high-protein feed with total consumption of high-protein feeds continuing to trend upward per animal unit. The good demand for soybean meal has resulted in soybean meal prices advancing in the past 5 years in relation to most other feeds, in spite of increasing soybean meal production.

F. Food Grains

1. Wheat. In 1962-63, the supply of wheat declined, reversing the trend of recent years. The stocks on hand at the beginning of the current year were sharply reduced by the record heavy exports in 1961-62, and the current crop is substantially smaller as a result of the special 1962 wheat program. With total disappearance expected to be greater than the 1962 crop, stocks would again be reduced in 1963.

Prices in 1962-63 are starting from a high level and may therefore show little seasonal advance. With the tight supply situation, they are likely to average above the effective price support level for the entire year.

2. Rice. Rice, like wheat, experienced a cut in stocks on July 31 as a result of heavy exports. However, the decline in the beginning stocks are about offset by the increased 1962 crop, the second largest in history, resulting in a 1962-63 supply little changed from that of a year earlier. With a continued high level of disappearance, stocks at the end of the year may be held near their current low level.

Prices were high relative to support in 1961-62, reflecting the higher support level and the tight supply situation. In 1962-63, prices may again be strong and probably will continue to average above the support level.

3. Wheat and Rice. During the last 18 months, a number of articles have been published on the consumption of wheat, rice and other cereal food products. These appeared in the Wheat Situation and the National Food Situation, covering bread, macaroni foods, breakfast cereals and trends in consumption of all cereal foods. Since the end of World War II, per capita consumption of flour and cereal products has declined 15 percent, a continuation of the downtrend that has been underway since the turn of the century. Wheat accounts for about 80 percent of the flour and cereal products consumed as food; corn, about 10 percent; and oats, barley, rice, rye and buckwheat, the remaining 10 percent. Most of the decline has been

in wheat flour or cornmeal. Other food uses of these grains are about unchanged. Rice is the only cereal for which per capita consumption has been maintained.

Analysis of the decline in bread consumption indicates that most of the decline has been in home baked bread, with very little decline in commercial bread. The recent level of commercial bread consumption appears to be fairly well established, unless there is a change in the pattern of consumer tastes or in the low price elasticity of bread.

Among the conclusions in the export program study was that prices and hence farm income would tend to be higher under either a PIK or a cash subsidy export program than under a program where exports come largely from CCC stocks. This is because the PIK or cash subsidy program encourages the trade to bid for export supplies in the open market, enhancing open market demand. In contrast, sales from CCC stocks for export tend to depress prices, since the export outlet is denied to free-market supplies, the excess of which must ultimately find its way into the hands of CCC under the price-support program.

G. Fruits and Tree Nuts

1. Deciduous Fruits and Tree Nuts. Production of deciduous fruits in 1961 was about 8 percent larger than in 1960 and 9 percent above the 1950-59 average. Current estimates put the 1962 crop 2 percent below 1961 but 4 percent above average. The reductions from 1961 are in apples, apricots, peaches, plums, and strawberries.

Total production of edible tree nuts in 1961 was a record, 17 percent above the heavy 1960 tonnage. But prospective production for 1962 is 33 percent below 1961 and 13 percent below average. Only walnuts show an increase in 1962.

Approximately 59 percent of the 1961 deciduous fruit crop was processed. Although this percentage was the same as for the 1960 crop, the tonnage processed was larger because of the heavier 1961 crop. This contributed to record 1961 packs of canned and frozen fruits and to an increase in output of dried fruits. Another large pack of canned fruits is expected in 1962, but output of frozen and dried fruits probably will be below 1961.

Although total production of fruits in 1961 was moderately larger than in 1960, season-average prices received by growers for several fruit crops, notably sour cherries, peaches, pears, and grapes, were above prices for the 1960 crops. Strong demand for processing was a contributing factor. With production of most fruit crops also large in 1962 and processor demand not so strong, grower prices early in the 1962 season have tended to average below 1961 levels.

A study of the peach economy since 1935 showed (a) a moderate but irregular upward trend in production; (b) a striking shift in emphasis from fresh use and drying to canning; and (c) a moderate increase in total consumption of peaches, but a small decline in per capita consumption.

A statistical study of Hawaiian fruits and tree nuts showed: (a) that the value of production of fruits and tree nuts in Hawaii in 1959 was about 3 percent of the value of production on the mainland that year; (b) that pineapple was the major item, the most of which was shipped in processed form to the mainland; and (c) that pineapple comprised about 5 to 6 percent of total fruit consumption on the mainland during the past decade.

An analysis of trends in the production and use of both sweet and sour cherries since 1938 indicated: (a) increased production of sweet and sour varieties during the 1940's, thereafter no marked trends, though output of sour was at a higher level than that of sweet; (b) declines in fresh use, increases in processing, especially in sweet cherries brined and in sour cherries frozen; and (c) increases in both total and per capita consumption of cherries until 1950, then declines.

2. Citrus Fruits. The 1961-62 citrus crop was a record, 13 percent above 1960-61 and 10 percent above average. Current indications for 1962-63 point to another large citrus crop. Prospects are most favorable for oranges and grapefruit, least favorable perhaps for lemons.

About 81 percent of the record 1961-62 Florida orange crop was processed. Output of both canned single-strength juice and frozen concentrate was up considerably, that of the latter topping by 38 percent the previous record in 1960-61. Current stocks of these and other citrus juices are much larger than a year ago, despite increased movement. Retail prices are below a year ago.

Grower prices for the larger 1961-62 citrus crops generally have averaged below prices for the 1960-61 crops. However, prices for California oranges, of which production was down, frequently averaged above 1960-61 prices. Following the freeze damage to the Texas citrus crops in January 1962, prices for Florida pink seedless grapefruit increased to levels above comparable prices in the first half of 1961.

A study of trends in citrus production and use since 1935 revealed the following developments: (a) a rising trend in total production of citrus fruits; (b) increased dominance of Florida as a producer of oranges and grapefruit; (c) increased emphasis in processing, and (d) shifts in consumption from fresh to processed items, especially frozen orange concentrate.

A similar study of postwar trends disclosed that per capita consumption of fresh and processed citrus fruit (fresh equivalent basis) during the 1950's did not change greatly in level but that consumption of fresh declined substantially while that of processed, especially frozen concentrate, increased an offsetting volume. Processed surpassed fresh in 1954 and in 1960 comprised about 61 percent of the total.

3. Deciduous and Citrus Fruits. An article, prepared in the Foreign Agricultural Service, USDA, examined U. S. foreign trade in fruit and tree nuts during 1950-60. It indicated that the value of exports more than doubled during the decade, with most of the increase in fresh fruit and in canned and frozen products. In terms of volume, the increase was about one-third. Leading destinations were Canada and Western Europe. During the same

decade, imports of bananas increased about one-fourth while those of other items increased only 4 percent (basis volume). The total volume of imports was about double that of exports.

New indexes were constructed for citrus fruits, noncitrus fruits, and both classes combined, and for tree nuts, beginning 1935. The three years, 1957, 1958, and 1959, comprise the base period. Weights are from the same years. The new indexes supplant similar indexes based on 1935-39 data.

H. Vegetables, Including Potatoes

1. Potatoes. Potatoes have been in burdensome supply and prices relatively low all year long, mainly because of a very large crop last fall. Over 19 million hundredweight of U. S. No. 2 or better grade potatoes from the 1961 crop were diverted to starch and livestock feed, under the USDA diversion program, at a cost of \$10.1 million. The 1962 fall crop is down 6 percent from that of 1961, but still is well above normal trade requirements.

A comprehensive research report, An Economic Study of the Potato Industry, notes that during the last decade, year-to-year variation in prices to potato growers averaged almost 50 percent. This serious instability in prices, and consequently in producers' income, results from a combination of the inelasticity of demand for potatoes and from variations in production. Because of this inelastic demand a 5 percent change in production of potatoes results, on the average, in an opposite change of 20 to 25 percent in price to growers. The tendency of the industry to overproduce, and the consequent depressing effect on prices also is examined.

Another study involved a detailed examination of trends in the geographic pattern of production of sweetpotatoes. Most striking developments in the sweetpotato industry during the past three decades were a 75 percent cut in acreage, a 60 percent increase in yield, and a decline of more than 50 percent in production. Trends also were examined by regions and in important States. The analysis indicated that gains in use of processed sweetpotatoes, including the newly developed sweetpotato flake may halt the downtrend in demand, and result in a stable to slowly expanding market in the present decade.

2. Vegetables. Total supplies of fresh vegetables in the winter and early spring of this year were moderately smaller than in 1961, and prices to growers materially higher. In late spring and summer, both supplies and prices averaged near those of a year earlier.

Both canned and frozen vegetables have been in generally heavy supply during the past year, although some grades of canned and frozen green peas were in a tight stocks position in the spring. Production estimates indicate continued large supplies of most frozen and canned vegetables into mid-1963, with supplies of canned tomato items likely to be record large. Consumer demand is expected to continue strong in the year ahead, and both f.o.b. and retail prices of most processed vegetables probably will average near those of a year earlier; but prices of most tomato items are likely to average lower.

A study prepared in FAS for the Vegetable Situation indicated a steady expansion of vegetable exports over the decade beginning in 1950. By the end of that decade, fresh vegetables accounted for about 49 percent of the value of all vegetable exports, canned about 47 percent, and frozen 4 percent.

Canada is the most important market for U. S. vegetables, and both U. S. and Canadian growers consider each country a part of their normal market. Mexico eventually may become a large market, particularly in the summer months. The Caribbean, Venezuela and the Middle American countries are important markets for some fresh vegetables and a few processed items. Further expansion will be closely linked with the economic development of these areas.

I. Cotton

The carryover of cotton on August 1, 1963, at around 9.0 mil. bales will be around 1.2 million bales above the level of August 1, 1962. This would be the highest since 1957, but well below the record high carryover of 14.5 million bales on August 1, 1956. The estimated increase in carryover reflects a larger crop for 1962 and a decline in disappearance during the 1962-63 crop year. Mill consumption is expected to drop to around 8.6 million bales, 400,000 below the 9.0 million consumed in 1961-62. This decline is indicated by a slowing down in the rate of consumption in recent months and by recent increases in the ratio of mill stocks to unfilled orders for cotton cloth.

U. S. exports of cotton during the 1962-63 marketing year are expected to total around 5 million bales, approximately the same as the 4.9 in 1961-62. Consumption of cotton in the foreign free world is expected to be maintained near the high level of the previous year, while production may be up a million bales.

New statistical series on the raw fiber content of U. S. imports and exports of cotton, wool and manmade fiber textile products have provided a greatly improved statistical basis for analyzing the factors influencing the economic position of these fibers. Adjustment of domestic mill consumption of fibers for U. S. imports and exports of textile fibers results in estimates of per capita domestic fiber consumption which show much less of a downward trend in the postwar period than do the unadjusted estimates of mill consumption of fibers. Further, when domestic fiber consumption per capita is converted to a cotton equivalent basis, the downtrend largely disappears.

Recently the estimates of foreign trade in textile manufactures, in terms of equivalent pounds of raw fiber, have been calculated and made available on a monthly basis.

The European Economic Community, frequently referred to as the Common Market, ranks as the fourth largest consumer of cotton after the U. S., Mainland China, and the USSR. Thus far, the organization of the EEC appears to have had little effect on cotton consumption, but prospects for expanded consumption in the Community are encouraging. An increase in the consumption of textile products seems likely, and cotton's share will depend in large part on the competitive position of cotton relative to synthetic fibers.

J. Wool

The U. S. wool industry experienced a moderate short-term recession in late 1960 and early 1961. During this period mill activity and imports of raw wool and wool textile products declined. Also, commercial stocks were worked down. By mid-1961, the wool industry had recovered from the recession and was beginning to expand quite rapidly. Mill consumption of apparel wools, especially on the worsted system, increased significantly during late 1961 and early 1962. This increase in mill use necessitated an increase in imports of raw dutiable wool. Reflecting this strong mill demand, wool prices also rose during the period of November 1961 through mid-summer 1962. In addition, imports of semiprocessed and manufactured wool textile products have increased during 1962 from the relatively lower levels of 1961 to near or above the record high levels of 1960.

Dominant factors in the world wool industry during the 1961-62 marketing season were: relatively low raw wool stocks in both the producing and consuming countries; record high levels of consumption; continued firm mill activity; moderately increasing production of wool textile products; expanding foreign trade in raw wool and wool products; a near-record high level of raw wool production; and relatively stable wool prices. At the opening of the 1962-63 marketing season the above conditions continued to prevail. Although these favorable conditions would suggest a shortage of wool and a rise in price, there is little likelihood of any real wool shortage developing or of any substantial price rise because of the increasing availability and use of manmade fibers in blends or pure form.

Analysis of imports of dutiable wool during the last decade reveals significant changes in the quantity, origin, condition, and grade of imports of dutiable raw wool into the United States. Aggregate dutiable raw wool imports have declined. The shares of the total imports have shifted considerably between the 5 major surplus-producing countries of the Southern Hemisphere. The proportion of imported dutiable wool in the scoured condition has increased while that of grease wool has decreased. Imports of dutiable wool grading 60's and finer have increased while those grading 56's and coarser have declined.

New statistical series relating to seasonal adjustments of mill use, domestic consumption of wool, and foreign trade in wool textile products were kept current and published regularly in the Wool Situation. In addition, the research analysis and preparation of the technical bulletin relating to the economic factors which affect mill consumption of wool as well as cotton and manmade fibers was virtually completed. The results will be published in the near future.

K. Tobacco

The carryover of flue-cured, the largest-volume tobacco, at the end of the 1961-62 marketing year was slightly lower than a year earlier but carryover of burley, the second largest kind, was a little larger than a year earlier. The 1962 crop of flue-cured is the largest in 6 years and the 1962 crop of burley is the largest in 8 years. Total supplies for 1962-63, the carryovers plus the 1962 crops, of both flue-cured and burley are indicated to be about 2 percent larger than for 1961-62.

The consumption of cigarettes and cigars in 1962 is likely to top 1961, but declines are indicated for smoking tobacco, chewing tobacco and snuff. The annual gain for cigarettes will be smaller than in several years. During 1962 there has been considerable discussion of the possible relationship between smoking and health. The Surgeon-General of the U. S. Public Health Service has established a committee to study the impact of smoking, auto exhausts, air pollution and other factors on health.

Exports of unmanufactured tobacco in 1962 seem likely to top 1961 and be the largest in 7 years but, viewed over the longer term, increasing foreign competition and trade restrictions of importing countries are adverse factors. The presently scheduled tobacco duty rates of the European Common Market will be disadvantageous to U. S. leaf compared with lower-priced tobacco from other exporting countries.

During 1961, a special study was made of cigar tobacco to determine the effect on the cigar industry and tobacco farmers if supplies of Cuban tobacco were to be cut off. The results were published in late 1961. It indicated that Cuban tobacco accounted for about a fourth of the cigar-tobacco supply in the U. S., and that about two-thirds of the cigars produced in this country would be affected if imports from Cuba were discontinued. At that time, it appeared that stocks of Cuban tobacco could be stretched over several years. An embargo on Cuban tobacco took effect in February 1962 and cigar tobacco developments since then are being closely watched and analyzed.

A continuing effort is being made to further improve forward estimates of domestic use and exports of tobacco leaf and of the prospective outputs of tobacco products. Also, considerable work has been done on 5-year projections on tobacco supplies, consumption and exports under varying assumptions. New annual series have been developed on the use of tobacco for cigarettes by kinds of tobacco that will be highly useful for analytical purposes. In 1961, flue-cured and burley comprised about 55½ and 33 percent of the tobacco (unstemmed processing weight) used for cigarette manufacture; imported tobacco constituted about 10 and Maryland tobacco, 1½ percent of the total leaf used for cigarettes. Better series on per capita consumption of cigarettes, cigars, and other products have been constructed and substituted for those formerly used.

PUBLICATIONS REPORTING RESULTS OF USDA AND COOPERATIVE RESEARCH

Livestock and Meat

Miller, Earl E. May 1962. Seasonality in slaughter hog weights. Livestock and Meat Situation.

Miller, Earl E. August 1961. What does the farmer get for meat animals? Agricultural Situation.

Seaborg, Donald. May 1962. Seasonal price variations for choice slaughter steers. Livestock and Meat Situation.

Van Meir, L. W. Livestock and Meat Situation. Published 7 times a year. ERS, USDA, Washington, D. C.

Van Meir, L. W. June 1962. Meat imports rise in first quarter of 1962. Agricultural Situation.

Van Meir, L. W. July 1962. The mid-year outlook for the livestock industry (mimeographed). ERS, Washington, D. C.

Livestock and Meat Statistics. June 1962. Supplement to ERS Statistical Bulletin No. 230.

Fats and Oils

Gazelle, S. A. March 1962. U. S. stockpile of oils gradually reducing. Fats and Oils Situation.

Kromer, G. W. 1962. Fats and Oils Situation. Published 5 times a year. ERS, USDA, Washington, D. C.

Kromer, G. W. January 1962. Use of corn oil in margarine expanding rapidly. Fats and Oils Situation. Reprinted as ERS-52.

Kromer, G. W. May 1962. Soap continues to decline as an outlet for fats and oils. Fats and Oils Situation. Reprinted as ERS-78.

Kromer, G. W. August 1962. Safflower expanding rapidly as oilseed crop. Fats and Oils Situation. Reprinted as ERS-91.

Dairy

Bluestone, Herman. October 1962. Milk outlets--the changing pattern. Agricultural Situation.

Mathis, A. G. Dairy Situation. Published 6 times a year. ERS, USDA, Washington, D. C.

Mathis, A. G. June 1962. Disposition of dairy products under P. L. 480. Dairy Situation.

Mathis, A. G. June 1962. Continued Story: milk sales up, cream sales down. Dairy Situation.

Dairy Statistics through 1961. 1962. ERS Statistical Bulletin No. 303.

Poultry and Eggs

Bluestone, Herman. Poultry and Egg Situation. Published 6 times a year. ERS, USDA, Washington, D. C.

Bluestone, Herman. January 1962. Regional changes in egg production. Poultry and Egg Situation.

Bluestone, Herman. March 1962. U. S. poultry exports and the Common Market. Poultry and Egg Situation.

Bluestone, Herman. May 1962. Some recent trends in the turkey industry. Poultry and Egg Situation.

Paddock, W. C. March 1962. Recent trends in egg consumption. Poultry and Egg Situation.

Feed

Clough, Malcolm. Feed Situation. Published 6 times a year. ERS, USDA, Washington, D. C.

Clough, Malcolm. July 1962. Movement of feed grains. Feed Situation

Clough, Malcolm. April 1962. Results of the 1961 feed grain program. Feed Situation.

Clough, Malcolm. 1962. Feed situation and outlook (mimeographed).

Presented at Midwest Regional Outlook Conference, Peoria, Illinois.

Grain and Feed Statistics Through 1961. 1962. ERS Statistical Bulletin No. 159.

Wheat and Rice

Askew, W. R. February 1962. Changes in consumption of cereal breakfast foods. National Food Situation.

Askew, W. R. February 1962. Bread consumption in the United States. Wheat Situation.

Askew, W. R. May 1962. Postwar changes in consumption of cereal grains and products. National Food Situation.

Post, R. E. The Wheat Situation. Published 5 times a year. ERS, USDA, Washington, D. C.

Analysis of grain export programs. 1962. Report of the Technical Committee on Grain Exports. Misc. Publication No. 905.

Grain and Feed Statistics Through 1961. 1962. Statistical Bulletin No. 159 (revised).

Post, R. E. Rice Situation. Published once a year. ERS, USDA, Washington, D. C.

Fruit

FitzSimmonds, R. S. October 1962. U. S. Foreign Trade in fruit. Fruit Situation.

Pubols, B. H. Fruit Situation. Published quarterly. ERS, USDA, Washington, D. C.

Pubols, B. H. January 1961. A half century of fruit consumption. Fruit Situation.

Pubols, B. H. June 1961. A quarter century of peaches. Fruit Situation.

Pubols, B. H. June 1962. Trends in cherry production and use. Fruit Situation.

Pubols, B. H. October 1962. Hawaiian fruits and tree nuts. Fruit Situation.

Pubols, B. H. March 1962. Citrus production: trends in the past quarter century. Agricultural Situation.

Pubols, B. H. October 1962. Postwar trends in citrus consumption. National Food Situation.

Vegetables, Including Potatoes

Simmons, W. M. The Vegetable Situation. Published quarterly. ERS, USDA, Washington, D. C.

- Simmons, W. M. April 1962. Potato price and income problems. Vegetable Situation.
- Simmons, W. M. July 1962. Trends in the geographic pattern of production of sweetpotatoes. Vegetable Situation.
- Simmons, W. M. March 1962. An economic study of the U. S. potato industry. Agricultural Economics Report No. 6. Washington, D. C.

Cotton

- Cathcart, W. E. September 1962. The European Economic Community and U. S. cotton exports. Cotton Situation.
- Donald, James E. Cotton Situation. Published 6 times a year. ERS, USDA, Washington, D. C.
- Donald, James E. September 1962. Decline in mill use of cotton may be offset by increased exports. Agricultural Situation.
- Lowenstein, F. and Donald, J. E. November 1962. U. S. foreign trade in textiles and domestic fiber consumption in cotton equivalent pounds. Cotton Situation.
- Wittmann, C. H. March 1962. U. S. monthly trade in textile manufactures. Cotton Situation.

Wool

- Raymond, C. E. Wool Situation. Published quarterly. ERS, USDA, Washington, D. C.
- Raymond, C. E. October 1962. U. S. shorn wool production. Wool Situation.
- Raymond, C. E. October 1962. Imports of dutiable raw wool. Wool Situation.
- Raymond, C. E. 1962. Changes needed in the lamb industry (mimeographed). Presented at Great Plains and Western Outlook Conference, Red Feather Lakes, Colorado.
- Wool Statistics and Related Data Through 1961. 1962. Supplement to ERS Statistical Bulletin No. 250.

Tobacco

- Conover, A. G. Tobacco Situation. Published quarterly. ERS, USDA, Washington, D. C.
- Conover, A. G. July 1962. Long-term competitive position of tobacco. Presented at Seminar for Southern Agricultural Leaders. Published by Agricultural Policy Institute, N. C. State College, Raleigh.
- Conover, A. G. June 1962. Shift towards filter tip cigarette slows. Agricultural Situation.
- Conover, A. G. September 1962. Tobacco used for cigarettes. Tobacco Situation.
- Sackrin, S. M. February 1962. Where the filler, binder, and wrapper grow. Agricultural Situation.
- Special Study of Cigar Tobacco. A report of a study group. 1962. ERS, USDA, Washington, D. C.

AREA NO. 2. SUPPLY, DEMAND AND PRICE OF AGRICULTURAL COMMODITIES

Problem. Producers, processors, distributors and consumers need better information on supplies, production and consumption of farm products, and the effect of these and other factors on the prices of these products. Similarly, Congress and the administrators of farm programs need to evaluate alternative proposals to modify existing price support and production control programs in terms of their impact on production, consumption and prices received by farmers.

The needs of all these groups require more accurate quantitative knowledge of the interrelationships among prices, production and consumption of farm products. Farmers need to know the prices they may expect from different levels of production in order to plan for maximum returns. Cooperatives, processors and distributors need adequate statistical information on price and consumption responses under different supply conditions to aid in distribution of agricultural supplies that lead to maximum returns to farmers. In addition, the strong and persistent tendency for farm production to exceed demand at favorable prices has resulted in a number of proposals to modify existing price support and production control programs.

The development of new statistical methods and the application of existing methods for measuring the interrelationships among prices, production and consumption of farm products serve these needs by strengthening outlook and situation work, providing the basis for special analyses of alternative agricultural policies, and assisting research workers in agricultural economics.

USDA PROGRAM

The program of basic research into the factors affecting prices, supply, and consumption of principal agricultural commodities has emphasized four broad research areas: (1) measurement of consumer response to price; (2) measurement of the effect of price and other factors on the production and supply of farm products; (3) measurement of the effect of supply and demand factors on farm prices and prices to consumers; and (4) improvement of statistical techniques for measuring economic relationships.

Changes in emphasis are made from time to time to effectively utilize the professional skills available and to adjust to work having the highest priority. The current emphasis is on a comprehensive analysis of the price-making forces in the feed-livestock economy with emphasis on factors affecting supply where relatively little economic research has been done. The research program along these four functional lines is geared to problem areas for individual commodities and related commodity groups. As specific agricultural programs are usually proposed on a commodity basis, the current program is discussed in detail on a commodity basis though much of the actual research is carried on jointly for related commodity groups.

(a) Livestock and Meat. This work involves 1.5 professional man-years located in Washington, D. C. Research on livestock is part of a comprehensive analysis of the price-making forces in the feed-livestock economy. This study gives special attention to the quantitative measures that show what happens to the production of each commodity within the feed-livestock sector following changes in price of one or more of the commodities. The study includes analyses for the United States as a whole and for regions to measure differences in price

response and to allow for the important farm and nonfarm alternatives available in each region. The emphasis during the past two years has been on factors affecting the price and supply of hogs. With completion of the hog study, research resources were shifted to a study of the economic factors that affect the supply and price of beef cattle and the demand for feeder cattle and the interrelations among these factors. Results from the beef, hog and feed grain studies along with analyses for milk, eggs, and broilers will be incorporated into an overall analysis of the feed-livestock economy.

(b) Feed Grains and Byproduct Feeds. This work involves 0.5 professional man-years located in Washington, D. C. The emphasis in this area is on development of data and statistical analyses which can be integrated into the larger analysis of the feed-livestock economy. The study includes statistical measures of the factors that affect both the supply and demand for feed grains and byproduct feeds. Special emphasis is being given to the interrelationships of prices and the substitution possibilities in the utilization of feed grains among the different kinds of livestock. Analyses are also being developed which will measure the influence of the factors affecting the production and supply of feed grains. Special emphasis will be given to the effect of changes in the price of one feed on the production of not only that feed grain but also other feed grains competing for the same farm resources.

(c) Cotton and Other Fibers. This work involves 2.0 professional man-years located in Washington, D. C. The purpose of this research program is (1) to measure the influence of economic factors that affect consumption of major textile fibers and (2) to measure the economic factors that affect the price, supply, and utilization of cotton and cotton products. The major effort during the past few years has been on research relating to consumption of fibers. This study provided analyses which make it possible to forecast quantities of cotton, wool, and fiber consumption. With completion of the consumption study research emphasis is now being shifted to analysis of price, supply, and utilization of cotton. Over the years, one of the major outlets for raw cotton has been exports. The study will examine factors causing variation in exports and will develop quantitative relations which can be used for forecasting exports of raw cotton. These, along with the developed equations for forecasting domestic consumption, will improve forecasts of the total utilization of cotton.

(d) Deciduous Fruits. This work involves 1.0 professional man-years located in Washington, D. C. The current emphasis is on demand and price analysis for peaches. The study includes analyses which measure statistically the influence on prices of available supplies of different types of peaches, consumer income, supplies of competing products, and the carryover stocks from the previous season. An attempt is being made to find statistical techniques which allow for the joint interaction among prices and different end uses such as fresh market, canning, drying, and freezing. Because of the substantial changes in utilization trends in recent years, these interactions are difficult to measure.

(e) Potatoes. This work involves 0.5 professional man-years located in Washington, D. C. Research on potatoes involves separate analyses for the total U. S. crop, the various seasonal crops, and special analyses for the major producing areas. These analyses measure the effect of price and other factors on acreage and production of potatoes; the effect of supplies and other factors on price and utilization of potatoes; the effect of price, income and other

factors on consumption; and the effect of price and other factors on storage demand and level of storage.

(f) Tobacco. This work involves 0.5 professional man-years located in Washington, D. C. Current research effort relates to (1) economic factors affecting supply, price, and utilization of tobacco and tobacco products and (2) economic effects of technological changes on supply, demand, utilization, and price of leaf tobacco. Under the first area of work, analyses which utilize both time series and cross section data, are developed to measure the influence of several factors affecting consumption of cigarettes, cigars, and the other tobacco products. Analyses relating to factors affecting prices of the major kinds of leaf tobacco, and to exports and seasonality are being undertaken. Under the second area of work, information and analyses are being developed for evaluating the effects of consumption trends and of recent technological changes in tobacco manufacturing on supply, demand, and price of leaf tobacco. Recent changes in quantity and character of leaf demanded and utilized by manufacturers and in the traditional structure of market prices are being analyzed from the standpoint of immediate and long-range effects on growers, export markets, and tobacco programs. The research program also includes modification and use of results from both areas of work in program appraisals involving effects of alternative price support levels and marketing controls.

(g) Improvement of Statistical Techniques. This work involves 1.5 professional man-years located in Washington, D. C. In the past decade there have been many changes in econometric methods used in price, supply, and consumption analysis. The research program consists of adapting the latest known econometric techniques and, where necessary, developing new techniques which permit more efficient ways of quantifying interrelationships among prices, supply, and consumption. The effectiveness of statistical relations for forecasting economic behavior may depend on the method of statistical estimation used in quantifying these relations. Special analyses are made to test the relative merits of obtaining forecasts for different methods of statistical estimation.

Another important way of improving techniques is the adaptation of statistical methods and econometric procedures to the electronic data processing facilities. This involves continual evaluation and carrying out of feasibility studies for application of automatic data processing systems to computational problems. The latest programming methods are searched out and reviewed to determine where new methods or programs can be used or where existing programs can be modified.

RELATED PROGRAMS OF STATE EXPERIMENT STATIONS AND INDUSTRY

The research program of State Experiment Stations for 1961 concerned with supply, demand and price of agricultural commodities was reported in Food and Agriculture, a Program of Research, Part III, Unit 19.

A few private colleges and organizations are engaged in price research, and may give attention to agricultural products from time to time. It is estimated that work on agricultural products may involve 5 to 10 professional man-years.

REPORT OF PROGRESS FOR USDA AND COOPERATIVE PROGRAMS

A. Livestock and Meat

Work on demand and prices for meat consisted of final preparation of a technical bulletin which summarizes some of the findings reported in a previous reporting period. This bulletin records the trends in production, consumption and price of the several meats and meat animals from 1921 to 1960. It seeks to ascertain values for economic factors affecting prices of meat such as supply of meat, income and price level. Factors affecting the demand and production of beef, pork and lamb are analyzed for three subperiods as well as the total period. Changes and similarities among these shorter periods are compared for a better understanding of short-term developments.

A study of the major economic factors that affect the supply and price of hogs has been completed and the results summarized in Technical Bulletin 1274, "Factors Affecting the Price and Supply of Hogs", which is now in press. Hogs are an important product for U. S. farmers, contributing \$3.4 billion to farm income in 1961. And, hogs consume nearly half the annual corn crop. Fluctuations in hog production and prices have gone through two fairly regular recurring cycles since 1953. Some knowledge of these fluctuations would benefit both producer and consumer by eliminating overproduction and shortages. There are many factors that cause variation in the quantity of pork produced and the price received for it. The number of sows farrowing, the number of pigs raised per sow, the number of hogs slaughtered, their average weight, and storage operations of processors all affect the quantity of pork produced.

The hog study develops an explanation of the production and price cycles and measures the relative effect of various factors such as prices of feed, beef and poultry, and consumer income upon the important variables in the hog economy. The variables explained with regression analysis using quarterly data are: (1) the number of sows farrowing; (2) number of hogs slaughtered; (3) quantity of pork produced; (4) cold storage holdings of pork; (5) retail price of pork; and (6) farm price of hogs. Some of the findings from these analyses were that a 10-percent increase in the October-December corn price results in a 2-percent decrease in farrowings the following year. A similar increase in beef prices decreases farrowings by 1 percent. A 10-percent increase in the October-December hog price is associated, on the average, with a 4-percent increase in farrowings the following year. The study also made a special analysis of seasonal variation in the hog industry. The analysis found that the amount of seasonal variation has gradually decreased during the last 10 years because of changes in feeding and production practices. In recent years, peak farrowings also occur earlier than they use to.

The making of price, supply and consumption forecasts and the economic appraisal of alternative programs are two important related aspects of price analysis work. To implement this activity, a 20-equation model for the feed-livestock economy, recently published by G. E. Brandow of Pennsylvania State University in The Interrelations Among Demands for Farm Products and Implications for Control of Market Supply, has been revised to make it applicable to this work. One of the revisions included using a more recent base period--1960. The model was also revised to allow for changes in trends in consumption and price of those commodities which seem to be exhibiting different trends than they were when the model was originally formulated. The revised model is being

used as one of the means in providing better estimates in projections work and economic appraisals of the Economic Research Service.

A study of the economic factors that influence the price and supply of beef cattle was recently began. An analysis of changes in the regional patterns of production of different classes of cattle is underway. Preliminary results from this analysis indicate that formulation of regional supply functions for the various classes of beef cattle will be needed. This is based on the fact that certain factors affecting the supply of beef may be important to some regions, but not relevant to all regions. The influence of these special factors cannot be isolated in a statistical analysis for the United States as a whole.

B. Feed Grains and Byproduct Feeds

An article was published in the September 1962 issue of the Feed Situations which reported findings from several analyses that measured the effects of selected factors on the total quantity of corn and of all feed grains fed to livestock. Of the factors considered, those found to be most important in influencing the consumption of corn were the price of corn, number of grain consuming animal units fed, the relation of price of livestock and products to the price of corn, and time trend. Results from the statistical analysis indicated that a 10-percent change in corn prices resulted in a 3.4-percent change in the opposite direction in corn consumed by livestock. In the case of consumption of total feed grains, it was found that a 10-percent drop (or increase) in the price of feed grains resulted in around 3-percent increase (or drop) in consumption.

A study was made of the seasonal variation of 16 of the more important by-product feeds. Indexes of seasonal variation were computed for these feeds based on monthly prices and the seasonal patterns were compared in tables and charts. The results were summarized in the Feed Situation, February 1961.

C. Cotton and Other Fibers

A study of the major economic factors which affect the demand for textile fibers in the United States has been completed and will be published in a technical bulletin in a few months. New statistical series of final domestic fiber consumption were developed as a part of the study. New estimates of consumption were developed because mill consumption of fibers has recently become an increasingly less satisfactory indicator of domestic fiber consumption. This has resulted because of (1) shifts in the pattern of U. S. foreign trade in textiles, and (2) because of shifts in the mix of fibers used in the manufacture of textiles to include a greater percentage of synthetic fibers which do not displace cotton and wool on a pound-for-pound basis. The new estimates of consumption, which take account of these shifts and the greater utility of synthetic fibers, represent the cotton equivalent volume of fiber used by domestic consumers. These estimates show an upward trend in the post-World War II period, in contrast with the downward trend in mill consumption of fibers. A separate Marketing Research Report was published describing the construction of these new series.

The major economic factors affecting domestic consumption of fibers were found to be the level of real disposable consumer income, year-to-year changes in the level of income and prices of textile fibers. These factors explained

about 90 percent of the variation in consumption. The single factor with the most influence on consumption was level of income. It was found that a 1-percent increase in income would be expected to result in a 0.8-percent increase in total domestic fiber consumption per capita. For the individual fibers, level of income was also found to have the most effect on their consumption. For cotton, a 1-percent increase in income would be expected to result in a 0.4-percent increase in per capita cotton consumption. These analysis will make it possible to forecast quantities of cotton, wool, and fiber consumption.

With the completion of the study on factors affecting the demand for textile fibers in the United States, emphasis in research was shifted to a study of price and utilization of cotton and cotton products. Exploratory analyses have been made of factors which affect U. S. cotton exports, including price, foreign production and consumption of cotton, and foreign consumption of synthetic fibers. Exploratory analyses have also been made of the demand for groups of fabrics to gain further insight into the domestic demand for cotton.

D. Deciduous Fruit

1. Peaches. Work was continued on the analysis of demand for peaches. More analyses of the factors affecting marketing of California Freestone peaches were made, with reasonably good results in explaining prices in the fresh market and for canning. About 70 percent of the price variation in the fresh market was explained, both in postwar and for 1935-58, omitting the war years. Income was an influential factor in prewar but not in postwar years. About 90 percent of the price variation in Freestones for canning was explained for the full period and about 85 percent in postwar years. Income was not important, as was the case in most parts of the study relating to processed peaches.

There doubtless is interaction among prices and quantities of Freestones going to fresh market, canning, drying, and freezing. Measurement of relationships among these end uses of Freestones is difficult because there have been substantial changes in utilization trends in recent years.

Grower prices for Clingstones for canning are best explained by expected supply on June 1 or July 1. Various formulations were tried but none explained more than half of the price variation. It is probable that competing products have an important effect but this has been difficult to measure.

2. Apples. A summary of apple demand and price analyses published since 1945 was made as part of a comprehensive report on what is known about apple production and marketing being prepared by the Department. Work done outside as well as within the Department is included. The summary points out that more is known about demand for apples, and the statistical measures often are more precise, than for many other fruits and that prices of apples are more responsive to changes in supply than prices of some fruits and most other agricultural products. The report suggests that due to the growing importance of canning in recent years, more studies relating to demand interrelationships for processed products and fresh market are needed. A draft of the report is in departmental review.

E. Potatoes

An overall study of the economics of the potato industry was conducted and results published as Agricultural Economic report No. 6. Sharply declining per capita consumption of potatoes up until about 1950, rapidly increasing specialization and concentration of production, and significant changes in utilization and marketing practices were examined particularly as they relate to the present status and problems of the industry. Growth in processing in recent years is credited with halting the long-time downtrend in per capita consumption of potatoes. Although acreage is now less than half that of 1920, production is moderately larger, as a result of sharply higher yield per acre. Marked shifts have occurred in the geographic pattern of production with the western region expanding rapidly to gain 45 percent of the late crop market while the central region's share dropped to about 25 percent. The Eastern States about maintained their position in the industry, at roughly a third of the U. S. total.

The demand for potatoes was found to be highly inelastic. During the last decade a 1-percent change in production resulted, on the average, in an opposite change of 4 to 5 percent in prices to growers. Because of this highly inelastic demand, even moderate variations in production cause sharp changes in price and income.

This study also analyzed the price-production interrelationships for important producing States. The analyses indicated that price and income stability in a given producing area is affected by changes in production in a competing area. The results showed that prices received by farmers for potatoes in Maine are influenced as much by changes in production in competing areas--for example, production in other Eastern States--as by changes in Maine production. Probably because of the type of potato produced in Idaho, changes in production outside the State had less impact on Idaho prices than the situation reported for Maine.

Another aspect of this study included an analysis of methods to cope with fluctuations in price and income to potato growers by making the demand for potatoes more responsive, or minimizing the variations in supplies available. This involved evaluating proposals to make demand more elastic by superimposing a Government "demand" through some price support, purchase, or income payment program, on the existing free market demand. Ways of attaining effective supply management through marketing quotas or through a combination of acreage allotments and marketing quotas also were considered.

A first draft of a technical bulletin on supply, demand and price structure for potatoes has been completed. Some of the findings, particularly those dealing with demand, covered in this manuscript have been summarized in the previous reporting period. Findings during the current reporting period are confined to analyses of supply response for each of the seasonal potato crops. Separate analyses were run measuring the effect of previous year's price on acreage of potatoes planted and on total production. The results showed that price responsiveness varied among the seasonal crops. For example, during the postwar period, farmers tended to increase (or decrease) the acreage in spring crops by 2 to 3 percent following an increase (or decrease) of 10 percent in price. In the case of the early summer and late summer and fall crops, the response was only a little over 1 percent. The analyses

indicated that response to price of total supply was also inelastic--a 2-percent change in production was indicated following a 10-percent change in price. Although the price response is low, significant year-to-year changes in acreage and production of potatoes occur mainly because of substantial year-to-year variations in potato prices.

A paper was prepared on storage demand for late summer and fall potatoes. It was found that substained price increases or decreases affected out-of-storage movement of potatoes between January 1 and April 30.

F. Tobacco

Analyses were made of factors affecting consumption of smoking tobacco and snuff, and some preliminary analyses run on factors affecting the price of the various kinds of leaf tobacco. For smoking tobacco, results of analyses suggest some change in forces operating in the prewar and postwar periods. In the prewar period, the price of cigarettes and income apparently were major influences affecting consumption of smoking tobacco; in the postwar period, income and trend appear to be dominant factors. For snuff, the decline in aggregate consumption since 1955 may be associated, at least in part, with the decline in number of production workers in industries where use of snuff is common because smoking is hazardous.

An article on factors affecting consumption of cigarettes was prepared and published in July 1962 issue of Agricultural Economics Research. From statistical analyses reported in this article, it was found that a 1-percent change in the price of cigarettes tended to be followed by a change in per capita consumption of from 0.3 to 0.4 percent in the opposite direction, while for a like change in income, consumption changed by about 0.5 percent in the same direction. Research results are used in economic analyses of effects of alternative price support levels and marketing controls on supply, domestic consumption, exports, and market price.

Trends in utilization of tobacco as affected by recent technological changes were analyzed as to their impact on growers, and findings were included in situation and outlook reports. The quantity of tobacco used in cigarettes has failed to keep pace with gains in cigarette output. Use of tobacco for cigarettes in 1961 is estimated at 1,220 million pounds (unstemmed-processing weight)--about 9 percent more than the 1950-52 average, but output of cigarettes rose 27 percent. The principal reasons that there was not a proportionate increase were (1) the sheet tobacco development by which manufacturers were able to use substantial quantities of stems and small tobacco particles that were formerly unusable for cigarettes, (2) the processing of more stems (mid-ribs) so they could be suitable for use in cigarette filler, and (3) the smaller tobacco column of many brands of nonfilter cigarettes. Estimates of the quantity of tobacco sheet used in cigarettes were prepared, and indicate that such use probably reached 100 million pounds in 1961--about 9 percent of the total tobacco material in finished cigarettes. Although preliminary analyses indicate that a considerable adjustment in leaf requirements to the tobacco sheet development has been made, there may be some further impact on the volume of leaf usage for cigarettes and cigars.

In connection with a study on economic effects of the embargo on Cuban tobacco imports, estimates were made of utilization of the various kinds of cigar tobacco in cigars and other outlets, and projections made of cigar tobacco

requirements by the 1965-66 marketing year. In the recent 3 years, cigar output has required an average of about 135 million pounds of tobacco (unstemmed weight) annually-around 46 million, imported, and 89 million, domestic. Cuba furnished around 31 million pounds or nearly one-fourth of the total. By 1965-66, the total requirement is projected at about 146 million pounds (unstemmed weight basis). In considering how to make up the approximately 30-million-pound gap in annual supplies resulting from the Cuban tobacco cut-off, a 9-million-pound increase (unstemmed weight) of domestic tobacco over and above normal growth was visualized as a result of certain shifts in type of cigar consumed. In order to maintain cigar consumption, the remaining 21-million-pound deficit would have to be made by bringing in additional suitable tobacco from foreign sources or developing acceptable blends that would permit still greater use of domestic tobacco.

G. Improvement of Statistical Techniques

The making of price, supply and consumption forecasts and the economic appraisal of alternative programs are two important related aspects of the price analysis work in the Economic and Statistical Analysis Division. To implement this activity, an experiment was designed to test the relative merits of obtaining forecasts by different methods of statistical estimation. Five basic Monte Carlo models have been formulated to test (a) a model with a greater degree of overidentification than was assumed in the Foote-Waugh experiment, (b) the results of a similar model except that predetermined variables would be selected from a normal rather than a rectangular distribution, and (c) the effects of varying the degree of intercorrelation among the predetermined variables in a system. However, higher priority assignments have prevented the actual testing of the experiment.

As part of a continuing program of evaluating improved methods of statistical estimation, an article was prepared which concentrated on certain methodological approaches and what implications they may have in helping research analysts to measure demand. The broad problems covered in this article included: (1) Some Necessary Ingredients in Demand Analysis: (2) Structural vs. Predictive Relations: (3) Simple vs. Complicated Methods: (4) Allowing for Changes in Structure: (5) Short- and Long-run Estimates of Demand: (6) Avoiding Nonsense Correlations Through Graphic Analysis and (7) How many Variations Should We Try? In discussing these problem areas, practical examples were given from analyses of the dairy industry. However, the conclusions reached from these analyses generally apply also to all agricultural commodities.

Several methods are available for measuring seasonal variation in economic data. One method that has not been used extensively but which has considerable merit is harmonic analysis. An article was published which discussed the relative merits of several methods of seasonal estimation. Methods based on moving averages have the disadvantage of possibly introducing a fictitious seasonal pattern. Harmonic analysis overcomes this disadvantage. The method was applied to seasonal variation in hog production. Statistical tests are also presented to decide whether or not changes in the pattern of seasonal variation have occurred.

It is frequently observed that higher correlation coefficients are obtained when the data used are group averages rather than individual observations. A study was conducted to explain why this difference exists. The study concluded that each measure is valid for particular purposes and cannot always be used inter-

changeably. These findings were summarized in a paper, "The Relationship between Group Averages."

An ERS study group on Supply of Farm Products was formed to generate new ideas, review concepts and theories, and explore ways of improving methods of measuring supply response. A report is being prepared summarizing the findings of this group.

One of the activities in price, supply, and consumption analyses is the adaptation of statistical and computational methods to electronic data processing equipment. A staff member continued to serve as the Division's data processing consultant with respect to the computational work of the Division. A substantial part of these methods using such statistical procedures as seasonal variation and multiple regression analyses is now standardized by electronic computer computation. In addition, many of the repetitive operations for the outlook and projections work of the Division were explored for possible machine application. For example, a program was completed for the Cotton and Other Fibers Section of the Division. It is designed to convert Census data on imports and exports of varied textile products to a common base--pounds of raw fiber equivalent--and then accumulate and summarize these results by specified categories. The computer program is sufficiently flexible to differentiate between export and import data and whether detail information concerns cotton, wool, or the manmade fibers.

Computer programs now available develop the many varied calculations of a regression analysis whether in logarithms or arithmetic terms. In this connection, a program designed to compute first differences for time series was added to the program library. It is especially useful as output cards are produced in the format required by the first program of the regression series. Thus, the addition of this program allows for calculations to be made either in actuals, first differences of actuals, logarithms, or first differences of logarithms.

Another program designed to produce the estimated and residual values of a regression equation has been modified to allow for the computation of antilogarithms. As a result of this revision, when a regression analysis is in logarithmic terms, the analyst has the option now of securing the antilogarithms of values predicted from the equation. However, program instructions are sufficiently generalized to accommodate logarithmic data in any form.

In recognition of the growing importance of automatic data processing, the Administrator of ERS appointed a task group to conduct a feasibility study for the application of ADP systems to ERS programs. This study group has been redesignated as the ERS Committee on Automatic Data Processing with a staff member of this work project as the Division's representative. Functions assigned the Committee have been broadened and, in addition to feasibility studies, relate to training, consultation, and liaison and coordination with the SRS data processing unit. Members of the group recently completed an ADP activity inventory for fiscal years 1963 and 1964. This was a first attempt to establish the present workload in ERS and the resulting demand on the SRS facility for equipment use. The report concluded that based on present activity, ERS will need approximately 350 hours on the IBM 7072 in FY 1964. The committee also initiated a training program for ERS personnel that generally reviewed ADP concepts, described the new equipment that will be available to Agricultural Economics, and covered procedures for utilizing such equipment.

PUBLICATIONS REPORTING RESULTS OF USDA AND COOPERATIVE RESEARCH

Livestock and Meat

Breimyer, Harold F. 1961. Demand and prices for meat--factors influencing their historical development. U.S. Dept. Agr. Tech. Bull. 1253, 108 pp.

Harlow, Arthur A. 1960. The hog cycle and the cobweb theorem. Jour. Farm Econ., 42(4), pp. 842-853.

Harlow, Arthur A. 1962. A recursive model of the hog industry. Agr. Econ. Research, 14(1), pp. 1-12.

Stanton, B. F. 1961. Seasonal demand for beef, pork, and broilers. Agr. Econ. Research, 13(1), pp. 1-14.

Feed Grains and Byproduct Feeds

Askew, William R. February 1961. Seasonal variation in prices of by-product feeds. Feed Situation, FdS-185, pp. 21-27

Hee, Olman. September 1962. Analysis of selected factors affecting the quantity of corn and total feed grains consumed by livestock. Feed Situation, FdS-195, pp. 21-27

Cotton and Other Fibers

Lowenstein, Frank and Donald, James R. March 1961. Domestic fiber consumption in cotton equivalent pounds. Cotton Situation, CS-193, pp. 18-27.

Lowenstein, Frank and Wittmann, Charles H. September 1961. United States foreign trade in textiles. Cotton Situation, CS-196, pp. 15-18.

Lowenstein, Frank and Wittmann, Charles H. January 1961. Foreign trade in manmade fiber manufactures. Cotton Situation, CS-192, pp. 14-16.

Lowenstein, Frank and Wittmann, Charles H. 1961. Fibers used in textile manufactures entering United States foreign trade, U.S. Dept. Agr. Mkt. Research Rpt. 491, 30 pp.

Potatoes

Hee, Olman. 1961. Storage demand for a perishable: potatoes. Jour. Farm Econ., 43(5), pp. 1410-1411.

Simmons, Will M. 1962. An economic study of the U.S. potato industry. U.S. Dept. Agr. Agr. Econ. Rpt. 6, 83 pp.

Tobacco

A Report of a Study Group of the U.S. Department of Agriculture. 1961. Special study on cigar tobacco. ERS 40, 71 pp.

Conover, Arthur G. September 1962. Tobacco used for cigarettes. Tobacco Situation, TS-101, pp. 21-25.

Sackrin, S. M. December 1960. Seasonality in production and taxable removals of manufactured tobacco products. Tobacco Situation, TS-94, pp. 51-55.

Sackrin, S. M. 1962. Factors affecting the demand for cigarettes. Agr. Econ. Research, 14(3), pp. 81-88.

Improvement of Statistical Techniques

Abel, Martin E. 1962. Harmonic analysis of seasonal variation with an application to hog production. Jour. Amer. Stat. Assn., 57(299), pp. 655-667.

Nerlove, Marc and Waugh, Frederick V. 1961. Advertising without supply control: some implications of a study of the advertising of oranges. Jour. Farm Econ., 43(4), pp. 813-837.

Randall, C. Kyle and Rojko, Anthony S. 1961. Methods, assumptions and results of the price and income projections of the United States Department of Agriculture. Jour. Farm Econ., 43(2), pp. 348-356.

Rojko, Anthony S. 1961. Time series analysis in measurement of demand. Agr. Econ. Research, 13(2), pp. 37-54.

Waugh, Frederick V. 1961. The place of least squares in econometrics. Econometrica, 29(3), pp. 386-396.

AREA NO. 3 - FARM INCOME

Problem. Timely and accurate statistical information and analyses on the farm income situation and outlook are essential to farmers, legislators, administrators, and others in developing production and marketing plans and in evaluating the needs for and operations of public programs for agriculture. Changes in the structure of commercial agriculture require the development of new methods and sources of data in order to maintain and improve the representativeness of farm income measures. Quantitative measures of the interrelationships between agriculture and other sectors of the economy are needed for assessing the impact of changes in the farm sector on related nonfarm sectors, as well as the impact of changes in nonfarm sectors on farming. Centralization and maintenance of a large number of economic time series pertaining to agriculture is required to permit prompt and accurate handling of a continuous flow of a wide diversity of requests for economic data on agriculture.

USDA PROGRAM

The Department has a continuing long-term program of economic and statistical research which includes the development of new methods and sources of data and the regular preparation of current estimates and projections. This work is located in Washington, D.C. The Federal program of research in this area involves 13 professional man-years. This is divided as follows:

(a) Work on current estimates of farm income and expenditures uses economic and statistical analysis to fulfill three main objectives: (1) The development, preparation and interpretation of monthly, quarterly, and annual estimates of farm income and expenses for the Nation as a whole and for several regions and States; (2) the analysis and interpretation of economic forces on and off the farm producing changes in farm income and expenses; and (3) the forecasting of future movements in these economic forces, leading to projections of prospective levels of farm income and expenses. In addition to the basic series developed under this project, miscellaneous farm series of a related nature are also developed and published. Analyses are also made of relationships between farm income and marketings, prices, expenditures, and nonfarm incomes. Shifts in the components of farm income and expenses are appraised and studies are made of short- and long-time trends.

The work is carried on in Washington, D.C. and close cooperation is maintained with units of the Statistical Reporting Service and with the National Income Division of the Department of Commerce. Cooperation is also maintained with other agencies of the Department, other Federal agencies, and certain private trade organizations.

The Federal effort devoted to this area of economic research totaled 5.0 professional man-years.

(b) Work in the field of research and methods relating to farm income is a continuing long-time project involving 5 professional man-years of research effort directed toward the following objectives: (1) Development of methods and sources of data for improving estimates of farm income and expenditures; (2) development of estimates of farm income by economic class of farm; (3) measurement and analysis of relationships between incomes of farm and non-farm population; and (4) measurement and analysis of relationships among agriculture and other sectors of the economy. Most of this research is done at departmental headquarters in Washington. Some work is also carried on in cooperation with other Federal agencies within and outside the Department. During the past six months a cooperative program of research relating to the utilization of input-output methods of analysis for developing long-term growth projections was started under a transfer of funds agreement with the U.S. Department of Labor. Another cooperative project involving the conduct of a Consumer's Expenditure Survey was also undertaken with the U.S. Department of Labor during the past year, although for this undertaking no transfers of funds were involved.

(c) Work on analysis of the impact of alternative farm programs on agriculture and the general economy involves the development of meaningful estimates and projections of the probable effects of proposed alternative farm programs on farm income and on the general economy. This work involves cooperation with other Branches of the Division, other Divisions of ERS and other agencies of the Department. About 1.5 professional man-years are devoted to this field of research.

(d) Centralization and maintenance of economic data pertaining to agriculture involved 1.5 professional man-years during the reporting period. Prompt and accurate handling of a continuous flow of widely divergent requests for economic data is the objective of this work. Farmers, administrators, legislators and the general public require accurate and meaningful data and analyses of the economic situation in agriculture.

RELATED PROGRAMS OF STATE EXPERIMENT STATIONS AND INDUSTRY

State Experiment Stations in 1961 reported their research in this area in Unit 17, Area 1 and Unit 18, Area 1.

The Department cooperated under a memorandum of agreement with the University of Illinois in an experimental survey of farmers' savings and with Michigan State University in a study of farmers' intended and actual purchases of farm machinery and equipment.

Industry and other organizations. A few private colleges and organizations do some work in the field of income and may give some attention to agriculture from time to time. It is estimated that work on agriculture may involve around 5 professional man-years.

REPORT OF PROGRESS FOR USDA AND COOPERATIVE PROGRAMS

A. Current estimates of farm income and expenditures.

Farmers' realized net income in the first half of 1962 was at an annual rate of about \$12.8 billion. This was about 2 percent more than in the first half of 1961 but about the same rate as for the full year 1961. In 1961, the estimates indicated that realized gross farm income increased \$2 billion over 1960 due to a gain of \$1.2 billion in cash receipts from farm marketings and \$800 million in Government payments to farmers. The estimated total of production expenses rose \$900 million in 1961 to over \$27 billion. With gross income up more than expenses in 1961, realized net farm income rose \$1.1 billion to \$12.8 billion, the highest since 1953.

The State estimates for 1961 indicated that realized net farm income rose in 26 States and dropped in 22 States. By regions, realized net farm income rose in the East North Central, West North Central, South Central, and South Atlantic regions, but declined in the North Atlantic and Western States.

Farm operators' realized net income per farm was estimated at a record high of \$3,360 in 1961, up 14 percent from 1960. This sharp increase in 1961 was accounted for by the \$1.1 billion increase in realized net farm income and a further drop in the number of farms.

Also during the reporting period, progress was made in incorporating data from the 1959 Census of Agriculture into the income estimates. This raised problems of comparability and level changes between previously published series on components of farm income and estimates consistent with the new definitions of a farm and the farm population.

Programming of certain receipts data through automatic data processing was extended to meet stepped-up time schedules and the continuous pressure of regular estimation and outlook work.

Farm income data are published in four issues of The Farm Income Situation and the Supplement to the July issue each year.

B. Research and methods relating to farm income.

During the past 2 years, considerable progress has been made in several important areas of research relating to maintaining and improving the representativeness and accuracy of farm income measures. Several new measures of farm income were also developed for purposes of revealing important aspects of the farm income problems of farmers.

1. Development of methods and sources of data for improving estimates of farm income and expenditures. During the past year, in cooperation with the Bureau of Labor Statistics, the Statistical Reporting Service, and the Consumer and Food Economics Research Division, ARS, the Farm Income Branch has been engaged in the conduct of a Consumer's Expenditure Survey for 1961. This included: (a) The development of questionnaires suitable for the farm households segment of the sample; (b) training enumerators for the field work; (c) editing selected sections of the questionnaires; and (d) developing tabulation plans.

Information obtained from the survey is expected to provide up-to-date benchmark data for income estimates, by economic class and by source, and control totals for various categories of production expenses.

An experimental survey of farmers' savings was conducted under a memorandum of agreement with ARS and the University of Illinois. This was an effort to test the accuracy of financial data obtained from farmers by various survey methods with the results revealing techniques and questions that would be suitable for use in nationwide surveys. The results are now being incorporated in a summary volume of the Consumers' Savings Project to be published by the University of Illinois.

A study of farmers' intended and actual purchases of farm machinery and equipment was made under a memorandum of agreement with the Michigan Agricultural Experiment Station. Over 900 members of the farmers' panel reporting to Michigan State University in its regular farm records system were asked about their intentions to purchase major items of machinery and equipment in 1959. A report entitled, "Intended and Actual Tractor Purchases by Farmers in Michigan, 1959" shows that a rather close correlation exists between reported plans to buy in the aggregate and actual purchases in the aggregate. Of particular interest is the finding that fulfillment ratios, that is, the percentage of farmers who actually bought after declaring an intention to buy, is highly correlated with the strength of their intentions and their income. The results so far obtained indicate that surveys of this type may prove useful for predictive purposes if applied on a nationwide basis.

2. Development of estimates of farm income by economic class of farm. Income measures were developed to more closely depict the income positions of various groups of farms within agriculture. In cooperation with the Bureau of the Census, data on the off-farm income of farm operator families, by economic class, were obtained from a Sample Survey of Agriculture for 1960. On the basis of this data, data from the 1959 Census of Agriculture and regularly published income series of the Farm Income Branch, estimates of total income of farm operator families by economic classes were developed. The estimates were included in Food and Agriculture--A Program for the 1960's, in which the Department's major programs and policies were outlined.

Major conclusions drawn from such new measures were: (1) Income sources and income problems on nearly 1.5 million farms with sales of \$5,000 or more are substantially different from those on farms with sales below \$5,000 and (2) even though levels of living on some of these larger farms are relatively good, earnings are generally not comparable to nonfarm earnings.

3. Measurement and analysis of relationships between incomes of farm and nonfarm population. Development of measures of income for the farm and nonfarm population on a personal income basis significantly improved the comparability of these data. In the July 1962 Farm Income Situation such comparisons were published for the first time, breaking down the U.S. Department of Commerce estimates of personal income between the farm and nonfarm populations, and showing per capita incomes on the same basis. The per capita estimates were developed back to 1934 and incorporated

revisions in population estimates consistent with the 1959 Census of Agriculture definition of a farm, and the new and more restrictive definition of farm residence in the 1960 Census of Population.

Personal income of the farm population from farming consists of the sum of total net income of farm operators living on farms plus farm wages, salaries and other labor income of hired workers living on farms minus social security contributions of both operators and hired workers. Net income of farm operators and farm wages of hired farm workers who do not live on farms are excluded.

Personal income of the farm population from nonfarm sources consists of the following: (a) Wages and salaries from nonfarm employment received by farm operators and family members minus social security contributions; (b) nonfarm business and professional income; (c) rents from nonfarm sources, dividends, royalties, etc.; (d) transfer payments; and (e) imputed interest in the form of bank services.

Thus, the personal income concept for farm people represents the total flow of income to persons on farms from all sources. It includes the income from farming represented by returns to resident farm operators for their capital, labor and management after deduction of farm production expenses. In the estimate of farm production expenses, there is no allowance for a return on the large investment of farm capital. In addition to other income from nonfarm sources, it has been possible for the first time to include transfer payments including such items as unemployment compensation and social security payments in the estimates of nonfarm income received by farm people. On a per capita basis, the personal income estimates represent a comprehensive measure of the ability of the farm population to participate in the Nation's rising level of living.

Benchmark data for estimates of the personal income of the farm population from nonfarm sources were obtained from surveys for the mid-30's, 1946, 1950, 1955 and 1960.

Personal income of the farm population from all sources is the sum of personal income from farm sources and personal income from nonfarm sources. Personal income of the nonfarm population is obtained by subtracting personal income of the farm population from total personal income for the United States.

4. Measurement and analysis of relationships between agriculture and other segments of the economy. Work on the development of input-output transactions accounts for 18 agricultural sectors for the year 1958 is virtually completed. The preparation of these accounts involved the processing of thousands of estimates from literally hundreds of different sources. Work on reconciliation of agricultural sector accounts with those for nonagricultural sectors developed by the National Economic Division of the Department of Commerce is now underway and should be completed within six months.

Completion of the entire input-output transactions matrix for the entire economy will permit up-to-date analyses of quantitative interrelationships among sectors.

With the computation of the general inverse of the transactions matrix, it will be possible to measure both the direct and indirect effects upon individual agricultural sectors of final deliveries by every other sector in the economy. It should serve as a useful analytical tool for measuring resource requirement implications of program adjustments in specific commodity areas.

Preliminary work was begun on the possible approaches to the development of projections, utilizing input-output techniques, of economic characteristics relating to agriculture for the Economic Growth and Employment Opportunities Project of the Interagency Growth Study Committee.

Characteristics to be projected for agriculture and related manufacturing industries include: (1) Inputs of labor, capital, and materials and services; (2) output of products by commodity group; (3) distribution of outputs to final demand and intermediate sectors; and (4) labor and non-labor income, costs and prices.

C. Analysis of the impact of alternative farm programs on agriculture and the general economy.

Work in this field involved participation in the following activities:

1. A work group which prepared technical material in connection with (a) the submission of proposed legislation for an emergency feed grain program for 1961. This legislation was passed by the Congress and the program was in operation for the 1961 crops of feed grains; (b) extension of the feed grain program to 1962 crops and the initiation of a similar program for the 1962 crop of wheat as required by the Agricultural Act of 1961; and (c) consideration of longer-range programs for both wheat and feed grains submitted for congressional consideration early in 1962.
2. Development of plans for the pilot food stamp plan which is now in operation required projections of prices received by farmers for farm products as a percentage of parity for several months ahead. Effects of excluding commodities selling at more than 90 percent of parity were explored.
3. Preparation of projections of farm prices and incomes over the next five years under three different farm program assumptions. These projections were prepared for the Office of the Secretary. Part of the results were published in Food and Agriculture, A Program for the 1960's.
4. The project leader, in cooperation with the Head of the Price and Trade Research Section, prepared a paper entitled, Methods, Assumptions, and Results of the Price and Income Projections of the United States Department of Agriculture. This paper was a discussion of the projections prepared at the request of Senator Ellender, Chairman of the Senate Committee on Agriculture and Forestry and published in Senate Document No. 77, 86th Congress, 2d Session, 1960. The paper was presented at a joint meeting of the American Farm Economic Association and the Econometric Society at St. Louis, Missouri, December 28, 1960.
5. Work groups which prepared background information used in preparing analyses of the Cropland Retirement Act and an Adaptive Program for Agriculture proposed by CED.

6. A new concept of income parity is being explored. This concept would define parity income as the farm income that would yield returns to the capital and labor engaged in agriculture equal to those earned by similar resources in the nonfarm segment of the economy. Primary attention was directed to commercial farms for which the value of farm products sold was \$5,000 or more. The question was approached on the basis of aggregative income for all farms combined. A paper reporting this research has been prepared for publication in the October issue of Agricultural Economics Research.

D. Centralization and maintenance of economic data pertaining to agriculture. During the period under review, the Presidential campaign, the change in the Administration and consideration of agricultural legislation by the Congress led to a large volume of requests for agricultural information and analyses from both political parties, the outgoing and incoming policy officials of the Department, offices of Congressmen and congressional committees.

As a part of a reorganization of the economics work of the Department, the Statistical Services Section was transferred to the Farm Income Branch, Economic and Statistical Analysis Division, Economic Research Service. As a part of this realignment, responsibility for the preparation, reproduction, and circulation of a statistical handbook was transferred to this project. This handbook was developed under the direction of O.V. Wells, former Administrator of AMS. It has been extremely useful in providing up-to-the-minute statistical information to policy makers in the Department, chairmen of congressional committees, and other high-ranking officials.

The Department is giving increased emphasis to developing better public understanding of the significance of agriculture in American life. The project leader has cooperated closely with writers in the Department's Office of Information by supplying them data for several "public relations" booklets including: The Food We Eat, Background on Our Nation's Agriculture, Food is a Bargain, and Food for a Nation. The Department's Centennial Staff has also made numerous requests for data which were used in preparing releases publicizing the achievements of agriculture in the last 100 years. The project leader has also spent considerable time supplying and checking data for The Farm Fact Book which is being written in the Office of Information.

Major contributions of statistical data were made to the Economic Report of the President, Agricultural Statistics, the Statistical Abstract of the U.S., the World Almanac, and the summaries of agriculture in each of the States issued by the Office of Information. A large number of economic time series were supplied to Dr. Karl Fox of Iowa State University who is developing the agricultural sector of an econometric model of the U.S. agricultural economy. This work is sponsored by the Social Science Research Council.

Last December, the Secretary issued Secretary's Memorandum No. 1476 relating to checking economic data and analyses for public release. The memorandum stated that materials prepared primarily for release through press, radio and TV which contained basic economic data and analyses were

to be sent to the Statistical Services Section for checking and verification. This has resulted in greater demands on the time of the project leader and the personnel of the Section.

Interagency workgroups in which the project leader participated were: (1) A group assigned to review parity prices for figs, and to consider the industry's assertion that parity prices for figs were out of line with parity prices for other products; and (2) A group which supplied the Industry Committee of the Organization for Economic Cooperation and Development with a report on "Commercial Agriculture--Problems and Policies."

The project leader worked with staff members of the Office of Budget and Finance in a classification of budget expenditures of the Department by purpose or function. This project was undertaken to provide information for the Office of the Secretary as well as to comply with a request from the Senate Appropriations Committee.

PUBLICATIONS REPORTING RESULTS OF USDA AND COOPERATIVE RESEARCH

Current Estimates of Farm Income and Expenditures

The Farm Income Situation, published in February, April, July and November of each year in the reporting period.

The Supplement to the Farm Income Situation for July, August 1961 and August 1962.

Dallavalle, Q. F., and Kendall, A. R. "Farm Income Leveling Off in 1962." Agricultural Situation, SRS, USDA, September 1962.

Myers, M. and Kendall, A. R. "Farm Income Advances in 1961." Agricultural Situation, SRS, USDA, September 1961.

Norcross, Harry C. "Retail Value and Farm Income by Commodity Groups." Agricultural Economics Research, USDA, January 1961.

Research and Methods Relating to Farm Income

Wheat and the National Economy. Study for Senator Frank Carlson, included in the Congressional Record, August 29, 1960.

Masucci, Robert H. "Wheat Plays Important Role in National Economy." Agricultural Situation, Vol. 44, No. 10, October 1960.

Puterbaugh, Horace L. "Purchasing Power of Urban, Rural Nonfarm, and Rural Farm Income, 1955. Agricultural Economics Research, Vol. XIII, No. 3, July, 1961.

Intended and Actual Tractor Purchases by Farmers in Michigan, 1959, Quarterly Bulletin, Michigan Agricultural Experiment Station, Michigan State University, East Lansing, November, 1961.

Analysis of the Impact of Alternative Farm Programs on Agriculture and the General Economy

Randall, C. Kyle and Royko, Anthony S. Methods, Assumptions and Results of the Price and Income Projections of the United States Department of Agriculture. Paper delivered at a joint meeting of the American Farm Economic Association and the Econometric Society, St. Louis, Missouri, December 28, 1960.

AREA NO. 4. - ECONOMIC OUTLOOK, CONSUMPTION AND LONGER-RUN PROJECTIONS

Problem. Statistical information and comprehensive continuing analyses of changes in economic activity, legislation, technological developments, nutrition, and the like, as well as their impact on the agricultural situation and outlook are essential to farmers, legislators, administrators, private business, and others in scheduling production and marketing plans and in the evaluation and development of public programs. Information and analyses in this area of research include: (1) Continuing analyses of changes in economic activity, legislative programs, and other forces influencing the domestic and foreign demand for farm products, farm output, farm prices and incomes, and the general agricultural situation and outlook; (2) comprehensive and continuing appraisals of the longer-run prospects for agriculture, including appraisals of alternative farm policy proposals and other forces influencing prospective utilization and output of farm products and prices and incomes received by farmers; and (3) development and regular publication of comprehensive statistical data and analyses of supplies, utilization and distribution of food and other farm products.

USDA PROGRAM

The Department has a continuing long-term program in economic outlook, consumption of farm products, longer-run projections and policy appraisals. The staff of the Outlook and Projections Branch participating in this work average for the current program about 8 professional man years. Programs and activities in this area of work are discussed under three headings as follows:

Demand Analysis and Agricultural Outlook

This program involves appraisals of developments in economic activity, foreign demand, farm policy and other forces affecting the demand for farm products, supplies of farm products, farm prices and incomes, and the general agricultural situation and outlook. These appraisals are supported by research in statistical analyses of analytical frameworks and other tools used in analyzing changes in the general economy, in agriculture and in the major sectors of agriculture. The results are reported regularly in current situation reports, in special articles or presentations at the National and Regional Agricultural Outlook Conferences, and in bulletins, professional journals, memoranda and correspondence.

This work is located in Washington. There is no formal cooperation with other agencies of the Federal Government, State Universities and the Extension Service, or private groups. But there is extensive informal cooperation with all the above groups and close working relationships are maintained with the State Universities and Extension Services in connection with the National and Regional Agricultural Outlook Conferences.

An average of 3.0 professional man years are devoted to this line of work under the current program.

Longer-Run Projections

Research and analytical work in this area is oriented toward the longer-run prospects for agriculture relative to growth in the economy and in population, regional shifts and changes in the age distribution of the population, longer-run changes in the demand for farm products, technological developments and productivity trends influencing output, farm programs and other forces affecting prospective trends in domestic and foreign demand for farm products, output, prices, and incomes received by farmers.

This work is located in Washington. Cooperative working arrangements with other Divisions of the Economic Research Service and with other agencies of the Government are effected through the ERS Committee on Economic Projections. Informal contacts are maintained with State Universities, public and private research groups, private business, UN agencies, and others interested in longer-run appraisals for agriculture.

Effort devoted to this line of work totals about 2.0 professional man years plus the contribution of many commodity specialists in other Branches of ESA and other Divisions of ERS. Work of other contributors is reported by their Branches.

Supplies and Utilization of Food and Other Agricultural Products

This continues a long-term program of measurement and appraisal of the supply and consumption of foods and other farm products. Data are assembled and developed into statistical series measuring the supply and utilization of all food and nonfood agricultural products. Research in this area relates to factors influencing changes in consumption of food and other farm products. Publication of these statistical data and analyses appears regularly in current situation reports, statistical bulletins and handbooks, professional journals, speeches, memoranda and correspondence.

This work is carried on in Washington. No formal cooperative working agreements are required. But there is extensive informal cooperation and working relationships with other Branches of the Department, other Federal and State agencies, universities and private research groups.

Current professional effort in this line of work totals 3.0 man years.

RELATED PROGRAMS OF STATE EXPERIMENT STATIONS AND INDUSTRY

Research of State Experiment Stations is reported in Unit 17, Area 1 and Unit 18, Area 1 of Food And Agriculture--A Program of Research.

Many private and public research groups, universities, trade associations, and private firms carry on considerable research and analyses of the economic and agricultural outlook, appraisals of food consumption trends and the longer-run prospects for agriculture. Generally this work serves directly the management of a private company and, as a result, is confidential. Outlays on such related research and analysis is not available but it is estimated to total the equivalent of possibly 30 to 40 professional man years.

REPORT OF PROGRESS FOR USDA AND COOPERATIVE PROGRAMS

A. Demand Analysis and Agricultural Outlook

The agricultural situation and outlook for 1962 reported in the November 1961 issue of The Demand and Price Situation reported that, "...increases anticipated for capital expansion outlays, Government spending and other non-consumption outlays point to increases in output and employment and to rising consumer incomes and expenditures. A stronger domestic market for farm products in the coming year will be supplemented by continued large exports of farm products." For 1962 as a whole, agricultural exports are expected to total about the same as the record \$5.1 billion in 1961. The improved farm income situation this year is expected to continue into 1962 with little over-all change in realized net incomes of farm operators. Gross farm incomes will likely rise some from 1961 levels, reflecting little change in cash receipts and some further increase in Government payments. But some rise in farm production expenses will likely offset any improvement in gross income. These expectations assume present farm programs and price supports, average growing conditions, an expansion in the demand for farm products, and no major change in the international situation.

Similar analyses are also being prepared for publication in the fall of 1962 in connection with the Annual Agricultural Outlook Conference. Reappraisals of the annual outlook were published in April and current analyses of the economic situation and agricultural outlook were reported monthly in The Demand and Price Situation. This report also featured special topics such as: Trends in the labor force and employment; CCC operations; U.S. monetary conditions and the balance of payments; postwar movements in the demand for durable goods, agricultural exports, and foreign developments.

A semi-annual analytical framework for the economy and appraisals of economic relationships at different stages of the business cycle were fitted statistically and are being used as tools in appraising changes in economic activity and the demand for farm products in 1963. Related analytical frameworks for the agricultural sector are being improved and new ones developed to support the work on agricultural outlook.

B. Long-Run Agricultural Projections

The reorganization of the Agricultural Economic's work of the Department established a new Branch to deal with economic outlook and projections for the general economy and agriculture. Soon after the reorganization, the Administrator of the Economic Research Service appointed the ERS Committee on Economic Projections. This Committee has representation from each Division of ERS with the Chief, Outlook and Projections Branch as Chairman. Its primary function is to coordinate projections work of ERS, prepare projections for agriculture and develop related research programs. A new Section, Long-run Projections, was set up in the Branch to carry out the work on longer-run projections. Previously much of this work had been done in the Demand Analysis Section.

1. An appraisal of population income growth and food consumption in the Western States was completed. This work was joint with FED and results are published in Longer-Term Production Prospects for Western Agriculture by Adon Poli. Projected general economic growth and food consumption rates served as a basis for appraising future demand, output and needed agricultural adjustments in the West.
2. The work on a 5-year projection for agriculture now underway is scheduled for completion by November 1962. A first draft report on this work, Preliminary 5-Year Projections for Agriculture, projects an increase of around a tenth in the domestic market for farm products from 1961 to 1967. This is slightly less than the increase in population. Projected requirements and output under current domestic and export programs point to a continued liquidation of stocks of grains and a rise in net farm income. This preliminary work is being reexamined under three different sets of assumptions.
3. Demand projections were prepared for use in a number of administrative reports and publications relating to longer-run prospects for agricultural and forest products.
- (1) Projected Food Requirements and Supplies in the 1960's indicated that if output of American agriculture continues to increase at about the rate of the past decade, the prospective increase in domestic and export markets imply a continued accumulation of stocks.
- (2) Food And Agriculture--A Program for the 1960's outlined the Department's major program proposals for 1962. The long-run projections appear in Part III of this report, "Agriculture's Consumption-Production Balance". "We estimate a potential increase by 1967 of one-fourth in crop output from 1961--but an increase of only about 10 percent in the demand for farm products. This difference may be termed, The Production-Consumption Imbalance."
- (3) Land And Water Resources, A Policy Guide. Projected requirements for farm products and probable output, "...indicates that food and fiber requirements in 1980 could be met with 407 million acres of cropland, or about 50 million acres less than we had in 1959."
- (4) Longer-run appraisals were prepared for several speeches and such information pamphlets as Food Is A Bargain, The Food We Eat, Food For A Nation, etc.

C. Supplies and Utilization of Food and Other Agricultural Products

Consumer expenditures for food this year are running about 4 percent above a year earlier. The bill for marketing and processing food also rose in response to rising incomes. Food consumption per capita for 1962 is now indicated to be about the same as in 1961. Retail food prices this year are expected to average near the levels of last year. Prices of meat in the last half of 1962 are expected to average a little higher than a year earlier. Similar appraisals of the Nation's food situation and outlook were published quarterly in the National Food Situation, along with special articles related to food consumption trends and patterns.

1. Three agricultural handbooks were completed: Two were primarily analyses of statistical information on trends and patterns in food consumption; the other appraised measures and procedures for analysis of food consumption. The latter bulletin introduces new series on food consumption and describes limitations and uses of measures of food consumption in economic analyses.
2. Two statistical supplements were completed and published updating statistical data on consumption of food in the U. S. These supplements update regularly published statistics on the supply and distribution of all major foods.
3. The over-all framework of supply-utilization indexes for the agricultural economy were revised and rebased on a 1957-59 base. These data provide a convenient framework in which to summarize current outlook and longer-run projections.
4. Basic statistical tables on the supply and disposition of all major foods are prepared currently and are widely used throughout the Department and in other agencies of the Government.

Staff of the Branch also participated directly in appraisals for the World Food Budget, the pilot food stamp program, most of the longer-run studies of agriculture, information bulletins on Food Is A Bargain, Food For A Nation, etc. and in a number of other analyses and speeches.

PUBLICATIONS REPORTING RESULTS OF USDA
AND COOPERATIVE RESEARCH

Demand Analysis and Agricultural Outlook

- Gerra, Martin J. 1960. Little Change Seen In Farm Prices and Income. Agricultural Situation.
- Daly, R. F. 1961. The Demand for Farm Products.
- Gerra, Martin J. 1961. Picture Looks Better for Farm Income Prices. Agricultural Situation.
- Daly, R. F. 1961. National Economic Situation and Outlook for 1962.
- Daly, R. F. 1961. National Economic Outlook for 1962. Family Economics Review, pp. 3-4.
- Gerra, Martin J. 1961. Outlook Favorable for Farm Income and Prices. Agricultural Situation.
- Gerra, Martin J. 1962. The Demand for Farm Products. Agricultural Situation.
- Gerra, Martin J. 1962. Income and Prices Strengthened in 1961. Agricultural Situation.
- Gerra, Martin J. 1962. Farm Income and Prices Still Look Favorable for 1962. Agricultural Situation.
- Daly, R. F. 1962. General Economic and Agricultural Outlook for 1963-- Preliminary Discussion and Alternatives. Great Plains and Western Outlook Conference, and Midwest Regional Outlook Conference.

Long-run Agricultural Projections

1962. (Unpublished) Preliminary 5-Year Projections For Agriculture.

Projected Food Requirements and Supplies in the 1960's. 1961. Administrative report for the Director of Agricultural Economics.

1961. Resource Requirements for Meeting Projected Needs for Agricultural Production, Texas River Basins. (participated).

1961. The World Food Budget, 1962 and 1966. (participated).

Prospective Trends in the Utilization and Supply of Timber Products. 1962. Administratively Confidential report for use by the Office of the Secretary.

Daly, R. F. 1961. Agriculture in the 1960's: Demand Shifts and Tomorrow's Farming. Annual Conference for Extension Workers, University of Minnesota.

Substantial contribution to:

- (a) Food And Agriculture--A Program for the 1960's.
- (b) Land And Water Resources, A Policy Guide.

Supplies and Utilization of Food and Other Agricultural Products

1961 Supplement for 1960 to Consumption of Food in the United States, 1909-52. Agricultural Handbook No. 62.

1962 Supplement for 1961 to Consumption of Food in the United States, 1909-52. Agricultural Handbook No. 62.

Burk, Marguerite C. 1961. Measures and Procedures for Analysis of U. S. Food Consumption. Agricultural Handbook No. 206.

Burk, Marguerite C. 1961. Trends and Patterns in U. S. Food Consumption. Agricultural Handbook No. 214.

Gronbeck, Gertrude 1961. Consumption Trends and Patterns for Vegetables, Potatoes, Sweetpotatoes, Dry Beans and Peas. Agricultural Handbook No. 215.

Daly, R. F. 1962. The Future of Food in 1962. Tri-State Hospital Assembly, Chicago, Illinois.

Lavell, R. J. 1961. Outlook for Supplies and Prices of Food. Annual Agricultural Outlook Conference.

AREA NO. 5. AGRICULTURAL HISTORY

Problem. Historical research on major developments in farming and major changes in policies, programs, and organization of the Department of Agriculture provides a background for understanding current agricultural problems, for developing governmental programs aimed at solving these problems, and for developing a wider understanding of the past achievements of agriculture and the Department. Historical studies have provided some of the basic information needed by the Secretary of Agriculture, advisory committees appointed by the Secretary of Agriculture, Presidential commissions, and the Congress in formulating agricultural programs and policies. The accuracy of the studies and the promptness with which needs have been met have contributed to the more effective functioning of the Office of the Secretary and other policy-making offices and agencies.

USDA PROGRAM

The Department has a continuing long-term program of historical research carried out by historians working in close cooperation with economists, statisticians, physical scientists, and others. The program involves both basic research and the application of the results of basic research to current problems.

This project includes all formal research work in agricultural history carried on by the Federal Government. The effort devoted to the project totals 6 professional man-years. These resources are divided as follows:

- (a) Work on the development of agriculture in the United States, which currently involves 2 professional man-years.
- (b) Work on the history of USDA programs and organization, which currently involves 3.7 professional man-years.

RELATED PROGRAMS OF STATE EXPERIMENT STATIONS AND INDUSTRY

Research of State experiment stations in this area is not reported separately but is included with research reported under related areas.

REPORT OF PROGRESS FOR USDA AND COOPERATIVE PROGRAMS

A. Development of agriculture in the United States.

As the only office in the Federal Government conducting historical research on the development of American agriculture, the staff carries out numerous analyses of particular problems for the Administrator, the Office of the Secretary, other Government agencies, and research workers in the land-grant colleges and elsewhere. In some cases the analyses are published, but many are not.

A limited amount of research on technological revolutions in agriculture centering around the Civil War and World War II indicates that technological change has been concentrated around those two periods, with much less change in other periods of our history. Agricultural policy is affected by these periodic shifts. The results of this research were presented by a staff member at the annual meeting of the Economic History Association in September 1962.

Preliminary discussions looking to the preparation of a comprehensive analytic index or guide to source material on agricultural history have been held with a number of leading historians. The Agricultural History Society adopted a resolution urging this project at its annual meeting. Work should begin on the guide during the coming year.

No resources were assigned to research on the history of farm organizations during the past two years. However, two analyses of particular problems in this area were undertaken for the Office of the Secretary, the most recent being a historical study of the National Farmers Organization. Assistance was also given to research workers at State universities concerned with the development of farm organizations and their influence on agricultural policy.

B. History of USDA programs and organization.

The preparation of a Centennial History of the Department, under the leadership of the Department's Committee on Agricultural History, has taken most of the available research time during the past two years. This history is now in press, and is scheduled for publication late in 1962. The major theme of the history is that the Department has responded both to farm and non-farm needs for the past 100 years. This period may be appropriately called a century of service by the Department and the people making up its staff.

Work on historical studies of agricultural policies and programs, which will shortly be undertaken in greater depth than was possible in the Centennial History, has been carried out on a specific assignment basis. Such assignments have been made from the Office of the Administrator and from the Office of the Secretary. Some of these assignments result in published papers, but most of them are staff studies for use in policy determination. In addition, as in all history projects, considerable time was devoted to service work in answering requests for historical information from Department and other Government officials and the public.

A staff member was asked to present a paper on agricultural fundamentalism from the historical viewpoint at the annual meeting of the American Farm Economic Association in August 1962. As a result of research for this paper, the author concluded that agricultural fundamentalism could be traced to the Physiocrats, is linked to the development of the laissez-faire theory in economics, and is presently used by persons opposed to government price support and adjustment programs.

Historical studies of price support and adjustment programs were deferred until completion of the Centennial History, although previous work in this area has been used in the preparation of the larger history. However, previous work in this area has permitted a number of special assignments to be completed with dispatch. A study of types of direct payments has been used by a number of Department officials concerned with price policy.

PUBLICATIONS REPORTING RESULTS OF USDA AND COOPERATIVE RESEARCH

Development of Agriculture in the United States

Rasmussen, W. D., 1960. Food technology. Technology and Culture, 1, pp. 376-381.

Rasmussen, W. D., 1962. The impact of technological change in American agriculture, 1862-1962. J. Econ. Hist., Dec. 1962.

Towne, M. W., and Rasmussen, W. D., 1960. Farm gross product and gross investment in the nineteenth century. Trends in the American Economy in the Nineteenth Century, Studies in Income and Wealth, 24, pp. 255-315.

Wiser, V., 1962. Maryland in the early land-grant college movement. Agr. Hist., Oct. 1962.

History of USDA Programs and Organization

Baker, G. L., 1962. Comments on agricultural fundamentalism. J. Farm Econ., Dec. 1962.

Baker, G. L., and Hardin, C. M., 1960. Agricultural policy, politics, and the public interest, suggestions for additional readings. Annals Amer. Acad. of Pol. and Soc. Science, 131, pp. 122-124.

Baker, G. L., Rasmussen, W. D., Wiser, V., and Porter, J. M., 1962. Century of Service: The First 100 Years of the United States Department of Agriculture. c. 550 pp.

Rasmussen, W. D., 1961. A century of marketing research and service. Agr. Marketing 6, no. 12, pp. 3-4.

Rasmussen, W. D., 1962. 100 Years of service through research and education. Extension Service Rev., 33, pp. 91, 108-109.

Rasmussen, W. D., editor, 1961. Growth Through Agricultural Progress; Lecture Series in Honor of the United States Department of Agriculture Centennial Year. 74 pp.

Rasmussen, W. D., and Baker, G. L., 1962. The Department is built. Yearbook of Agriculture, pp. 7-12.

AREA NO. 6. FARM POPULATION AND RURAL LIFE

Problem. The continuing rapid increases in the productivity of United States agriculture in recent decades, along with an expanding urban-industrial economy, have brought about great changes in the farm and rural population, in the farm manpower situation, and in the level of living of farm people. Because of the characteristic occupational and geographic mobility of rural people and the structural changes occurring in our agriculture under the impact of technological and economic progress, further changes can be expected in the size, composition and distribution of the farm population, the farm working force, and the level of living of farm and rural people. These past and prospective trends of a declining farm population have wide-spread implications on agricultural policy through their effects on the manpower situation, the scale of "family farming" and the relationship between farm and nonfarm levels of living. To measure adequately these trends, it is necessary to maintain up-to-date inventories of the population living on farms, the volume and direction of migration between farm and nonfarm areas, the levels of employment and labor conditions in agriculture, and adequate measures of the level of living, and relative well-being of farm and rural people. The collection of basic statistics in these areas, along with strengthened research and analyses, are of vital importance to a fuller understanding of the impact of agricultural policies and general economic and social conditions on agriculture, as guides to agricultural program re-appraisals and implementation of new activities such as the Rural Areas Development Program.

It is also generally recognized that some of the most critical problems and adjustments in agriculture and rural life, in addition to being economic, are in part social and in part psychological. For example, much of the difficulty and lag encountered in the adoption of accepted and effective agricultural production, marketing, resource conservation practices and effective adjustment and organization in community life and family living are rooted in a lack of effective organization and participation of rural people in all activities pertaining to improvements in agriculture and rural life. To overcome this lag, it is necessary to develop basic facts, principles and understandings concerning, (a) the forces operative in communication, in diffusion of information and ideas, and in adoption of farm and home practices, (b) decision making relevant to the social and economic problems confronted by farmers and rural families, (c) family structure and functioning as related to the community, farm entrepreneurship, labor sharing, partnership arrangements, vocational and level-of-living aspirations, and (d) the structure and functioning of the rural communities, institutions and organizations and their relationship to improvements and adjustments in agriculture and rural living.

USDA PROGRAM

The Department has a long-time continuing program of work designed to develop and analyze information on the farm and rural population; on the rural labor force; on levels of living of farm and other rural people; on population, manpower and related aspects of rural development; and on the

effects of the Social Security Program on farm operators, farm laborers, and farm landlords.

Studies of all types indicated above are being carried on in the Washington office both independently and in cooperation with other agencies of the Department, such as the Rural Development and other Branches of Farm Economics Division and the Statistical Reporting Service, and in cooperation with other Federal departments, including the Bureau of the Census, the Department of Labor, and the Department of Health, Education, and Welfare.

Farm population and related studies are being carried on in cooperation with or by contract with Experiment Stations in Iowa, Colorado, Delaware, Michigan, Oklahoma, and Texas and the Department provides consultant service to regional population projects involving 12 Northeastern States, 13 North Central States and 16 Southern States. Work is also done cooperatively or through contract with the Statistical Reporting Service and with the Bureau of the Census.

Manpower studies are done by the Washington Staff through contract for gathering of basic data with the Bureau of the Census, and through analyses of other data published by the Departments of Agriculture and Labor and the Census Bureau. In addition other studies on rural manpower problems are carried on in cooperation with various State Experiment Stations.

Social security and retirement studies have been done in cooperation with Experiment Stations in North Carolina and Minnesota and one is under-way which is cooperative with South Dakota.

Studies relating to various aspects of levels of living, health, and education of farm and rural people have been completed or are being carried on in cooperation with Experiment Stations in Connecticut, Kentucky, Florida, North Carolina, Pennsylvania, New York and with Brigham Young University in Utah. Also data for analyzing farm operator levels of living have been obtained through contract with the Bureau of the Census.

Many of the above projects provide data of particular relevance to rural development programs. In addition specifically designated rural development studies on population, manpower or level of living aspects have been completed or are being carried on cooperatively with the Experiment Stations in Ohio, Iowa, Arizona, Texas, Louisiana, Michigan, Kentucky and North Carolina.

The Federal effort devoted to research in this area currently totals 15.0 man years per year with 4.0 being devoted to Farm Population, 1.9 to Manpower, .8 to Social Security, 5.2 to Levels of Living and 3.1 to Rural Development.

During the reporting period no lines of work were terminated. Specific projects were terminated upon completion of analysis and other projects along the same general lines or on different aspects of farm population and rural life have been initiated.

RELATED PROGRAMS OF STATE EXPERIMENT STATIONS AND INDUSTRY

State Experiment Stations currently have about 48.8 man-years per year devoted to this area of research divided among regions approximately as follows: Northeast 14.9, North Central 15.5, South 15.1 and West 3.3. In the Experiment Stations the subject matter breakdown currently is roughly as follows:

	<u>Man-years</u>
Farm Population Changes, Trends and Migration Patterns	12.9
Farm and Rural Manpower Analysis	1.4
Impact of Social Security Program on Farm People	.1
Population, Manpower, and Related Aspects of Rural Development	8.3
Rural Level-of-Living Analyses	3.4
Rural Social Organizations	7.4
Social Economies of Agriculture and Rural Life	2.3
Diffusion of Information and Adoption of New Practices	6.6
Goals, Values and Decision Making	2.5
Miscellaneous	3.9

There is little research in the fields indicated above carried on by private research agencies as the Federal Government and the State Experiment Stations provide most of the data and research of this nature. Survey research centers sometimes perform contract research concerned with aspects of population, labor force analyses, and levels of living, but such research is generally focussed on the urban population.

REPORT OF PROGRESS FOR USDA AND COOPERATIVE PROGRAMS

A. Farm Population Changes, Trends, and Migration Patterns

1. Population Changes and Trends. The farm population numbered about 15,635,000 in 1960. Because of the introduction of a new and more restrictive definition of farm residence, this estimate was nearly one-fourth lower than that which would have been obtained under former procedures. To insure understanding of the conditions necessitating the change and of the characteristics of the people being removed from the farm population classification, a special report was issued showing the farm population on both bases from sample surveys taken in two years, 1959 and 1960. The people who on net balance were removed from the farm population proved as expected - to have little or no economic connection with agriculture.

Revisions of farm population estimates for 1941 through 1959 were prepared to provide a continuous comparable series of farm population estimates, mainly to permit computation of annual per capita income figures. This revised set of estimates shows the farm population declining from 30,547,000 in 1940 to 15,635,000 in 1960, compared with a decline from 30,547,000 to 20,541,000 under the old series.

Annual estimates for 1961 indicated that the decline in farm population continued. At that time, about 14.8 million people lived on farms. Indications are that farm population will continue to decline in 1962. A high ratio of males to females continues to be a distinctive feature of the farm population. In 1961 there were 109 farm males for every 100 females. By contrast the total population had a sex ratio of only 97. The farm population is a young population in the sense that it has a high proportion of children and teen aged youths. However, it is rather low in proportion of young adults and persons of early middle age, largely because of out-migration. Farm persons in the late middle age or older ages considerably out-number younger adults, a condition that does not exist in the nonfarm population.

The Department continued to supply consulting service to regional projects concerned with population analyses. Findings of research are not reported as the Department's role has been strictly of an advisory nature in this period.

Projects relating to various aspects of population changes and trends have been conducted cooperatively with State Experiment Stations in several States. In Texas, a study in Mills County, one of a number of counties experiencing severe drought for a period of years in the 1950 decade, indicated that heavier than average migration occurred as a consequence of the severity of the situation. Farmers remaining in the area often changed their type of farming in an effort to cope with the dry conditions, especially by increasing their sheep, goat, and poultry enterprises. Once the drought was broken, conditions and general outlook showed an almost immediate improvement. Farmers and ranchmen were optimistic about the future, but there was no apparent return to the area of people who had left during the height of the drought.

A cooperative project, with Oklahoma State University, studying variations in the 1950-60 gains and losses of population in towns and cities of under 10,000 in the South has been initiated and analysis is underway.

A new project designed to produce measures of the potential replacement in the rural population of labor force age was designed during the year. Computational work is being done by the Michigan State University for the Department of Agriculture. Some preliminary computations indicate that in the absence of migration from the farm population there would be about 160 young men reaching age 20 for every 100 older men leaving working age 20-64 through death or retirement, during the 1960-70 decade, a ratio not greatly different from the previous decade when the replacement ratio for this working age group was 168.

2. Migration. Data have been developed and analyzed on migration from the farm and rural population for the United States and major areas thereof. Also, field studies were conducted in selected States on adjustment processes associated with migration.

Preliminary estimates of net migration developed in connection with the revised estimates of farm population for the 1940-60 period, mentioned above, indicate that between 1950 and 1960 net movement from the farm population averaged over 1 million persons per year, a substantially larger figure than that shown by the unrevised series of farm population estimates.

Interim results from a large project devoted to the computation and analysis of migration estimates and rates for counties and other areas of the United States, reveal much about population shifts in the 1950-60 decade. In the Great Plains, for instance, the redistribution of population that occurred was mainly an interchange between the different population concentrations, with the largest becoming larger at the expense of the highly rural and farm areas. During the decade, the 20 Metropolitan Counties in the Great Plains Region gained the equivalent of about 4 out of every 6 persons lost by the Nonmetropolitan Counties. Sixty-five percent of the net loss due to migration from the region's Nonmetropolitan Counties were persons under 20 years of age in 1950.

Analysis is underway of data obtained on the U. S. population 18 years old and over classified by whether they were born on farms or in nonfarm places, and on length of farm residence of those born on farms. A majority of farm-born persons (63 percent) were living in nonfarm areas at the time of the survey in 1958, whereas only 3 percent of the nonfarm-born persons were residing on farms. Considering the matter another way, of the farm resident population 18 years old and over at the time of the survey, 78 percent were composed of persons who had been born on farms, while 82 percent of the nonfarm-resident population were born in nonfarm places. Although population movement is overwhelmingly farm-to-nonfarm, currently among persons 18 years old and over, farm-born persons do not make up as large a proportion of the nonfarm population as nonfarm-born persons make up of the farm population.

Projects cooperative with Experiment Stations in selected States have dealt with various aspects of migration that cannot be studied through analyses of data from the censuses or nation-wide surveys. In Michigan, for instance, surveys were made to determine the occupational, educational, and residential plans of rural high school youth and the influence that rural persons in professional occupations had on the plans of youth in several low-income counties. The influences on youth by different professional groups were closely related to the degree of their contacts. Teachers were by far the most influential on plans of young people, followed by members of the clergy. Lawyers, doctors, and dentists influenced decisions of the young people to a lesser degree; their influence was often of a personal nature.

Motives for migration other than the economic played a large role in the migration of young people from Sedgwick County, Colorado, where another study was made. Over two-thirds of the young migrants did not consider that they would want to make their life-time home in Sedgwick County, even if they were able to find adequate employment there. The county was considered "too dead"; there was not enough shopping, entertainment, or cultural opportunities. The young respondents considered more industry, better schools with improved curricula, and better recreational facilities to be foremost as important improvements needed in their home communities. The migration patterns of the Sedgwick migrants were fairly typical of young adults. Sixty-four percent moved alone; forty-three percent lived in a rooming or boarding house immediately after moving from parental home; nearly 80 percent moved relatively short distances, staying in Colorado or nearby in Nebraska. Thirty-seven percent received some college training after leaving the County, and an additional 25 percent had some vocational training.

In Iowa and Delaware, several different aspects of adjustments of rural migrants to urban places have been investigated. In both places educational attainment was an important factor in the adjustment or assimilation process. In Des Moines, no significant differences were found between migrants and nonmigrants in socio-economic or occupational status when educational attainment was taken into consideration. The Delaware survey has given additional insight into important aspects of adjustments of migrants. Differences in various measures of adjustment between migrants from urban and rural places were less often significant, or of lesser magnitude, than were differences between white-collar and blue-collar workers. Also, recency of migration is closely associated with degree of assimilation.

From a study in Iowa, analysis has been made of the impact of population decline on rural community life. In general, adjustments to population change occurred on two fronts, reduction in number of business and other types of community units, and an alteration in the internal structure in remaining units. Trade in the smaller towns has been reduced to stop-gap or convenience shopping, with the exception of feed and fertilizer trade. Much of the adjustment of business units is of a "retirement nature". Firms exhibiting this type of adjustment tend to be owned and operated by older persons, who will continue in business until they retire and then the unit will likely disappear. Analysis of community adjustments in the Great Plains States lead to the conclusion that in cities with greatly expanding population, community services and establishments are expanding at about an equivalent rate. In declining communities, however, there is considerable lag of retail and service establishment decline behind population change. This lag is to be expected as the operators of these businesses are often not mobile and they will continue in operation as long as financially feasible or until their retirement.

Preliminary results of a study of migration of farm people in Iowa during the 1950-60 decade indicates a substantial moving about with relatively little net change in the total number of people living in the open-country areas sampled. Less than half (48 percent) of the households in the sample accounted for nearly all (97 percent) of the population movement. In thirty percent of the households, no one had moved in or out in the decade. The occupational composition of the population had changed considerably, with higher percentages of the employed being in nonfarm work at the end than in the beginning of the period. Migration accounted for less than half of the reduction in farm operators, while change to nonfarm jobs or retirement accounted for more than half of the reduction.

3. Description of State Economic Areas. The project was completed during this reporting period. A book entitled, Economic Areas of the United States, was published as the culmination of the work. It is a major publication of some 1,400 pages, including descriptions and photographs of the characteristics of each of the State Economic Areas, subregions, and regions that have been used as statistical units in reports of the censuses of agriculture, population, and housing, and of the Department of Agriculture. It presents pertinent statistical data for each area and discusses the nature and use in analytical work of the system of economic areas. The book has received much public attention and is being utilized by many government departments, and other public and private research agencies.

B. Farm and Rural Manpower Analyses

1. Agricultural Manpower, Employment, and Wages. An advance report on the 1961 survey of the hired farm working force conducted for the Economic Research Service by the Bureau of the Census in December 1961 shows that nearly 3.5 million persons did farm wage work at some time during the year. Average daily cash earnings from farm work was \$6.50 compared with \$6.25 a year earlier. Data gathered on skill levels showed that 46 percent of the male workers doing 25 days or more of farm wage work had substantial experience working with farm machinery in the year.

A report and chart book prepared on the 1960 hired farm working force includes data on the age, sex, employment, earnings, and other information on farm wage workers. Year-round workers contributed 44 percent of the man-days of farm wage work in 1960 compared with only 5 percent for casual workers (persons doing less than 25 days of farm wage work during the year). Household heads constituted nearly two-fifths of the farm wage workers. Persons with higher educational levels commanded higher daily farm cash wage earnings than persons with less education.

In 1960, seven percent of the 3.7 million farm wage workers were of Spanish-American ancestry. They comprised one-fourth of the migratory workers. Two-thirds of the Spanish-Americans were born in the United States. A report on Spanish-American farm wage workers has been drafted and is undergoing office review.

A complete report on the 1959 hired farm working force was published during this period. The average cash farm wage expenditures for farm operators employing wage workers was \$1,358 in 1959. Only 9 percent of the farm employers had farm wage expenditures of \$2,500 or greater. Over one-third of the farm employers hired 6 or more farm wage workers during 1959.

Service work under this line project included activity in connection with various Departmental and Interdepartmental committees, and guidance and assistance to the Office of the Secretary in cooperation with staffs of other agencies in the preparation of various materials dealing with farm labor. Staff members prepared and presented a paper before the 1961 meetings of the American Farm Economics Association and the 38th Annual Outlook Conference.

2. Manpower Adjustments Associated With Suburbanization. This survey concerns the impact of rapidly expanding suburbs on the farm and nonfarm population in the rural-fringe of the Washington metropolitan area. Some of the significant findings were previously reported. Additional analysis shows that two-thirds of the farm residents and one-third of the nonfarm residents were children of farmers. The proportion of farmers among all residents was less than 1 in 10, but it is clear that for many fringe residents rural living is not a new experience. Almost half of all household heads have lived within the same area all their life; "newcomers" -- those who had lived in the area for less than 5 years -- amount to only about 10 percent. White-collar workers (professionals, nonfarm self-employed, and clerical and sales persons) make up the largest occupational group among fringe household heads, followed by craftsmen and operatives and other blue-collar workers.

An analysis of these data is in preparation and will be ready for publication by early Spring 1963.

C. Impact of Social Security Program on Farm People

1. Social Security. The significant findings of the study in Minnesota (now in press) were reported previously. The report of the North Carolina study reveals that since farm operators and landlords first became eligible under the OASI program they have shown a consistent increase in the proportion paying social security taxes. Two-thirds of the respondents 65 years of age or over in both the farm operator and landlord samples were social security beneficiaries. Most of the respondents were aware that self-employed farm operators are now covered by social security; however, there was little apparent awareness of, or appreciation for, the survivors and disability features of the program.

2. Retirement Plans. A report on the retirement plans and adjustments to retirement of farmers in South Dakota is in the early stages of preparation. A first draft of the manuscript should be available in early winter.

D. Population, Manpower, and Related Aspects of Rural Development

1. Rural Industrialization. Projects in this area of study are designed to appraise the impact of new industries on predominantly rural communities and to point up implications of rural industrialization for programs of rural development. A summary report on rural industrialization was prepared from information obtained in five studies conducted in four different States (Mississippi, Louisiana, Utah, and Iowa). Data from a study in Ohio (1957) were not included in the summary report as its objective was to establish benchmark data for a 1962 restudy which is now in the tabulation stage. Significant findings from the studies include: (1) Older rural workers with little industrial experience are least likely to seek or find jobs in rural industries, (2) industrial work in the area studied paid higher earnings than farming or other types of nonfarm employment available in low-income rural communities, (3) farm operators and former farm operators constituted a small but significant part of the plant work force, and (4) the general community attitude toward the new plant was favorable among plant workers and other area residents.

2. Adjustment of Special Groups. A series of studies have been conducted on the adjustments or the adjustment potentials of special groups, with particular attention in many of them to factors and attitudes of relevance to rural development programs. These studies cover a variety of subjects in scattered areas throughout the country. In Louisiana, for example, a study was made of the French and non-French rural populations of two low-income counties. It showed that people of French background lagged considerably behind the non-French in education and income. However, the French who had learned to speak English at home in childhood had achieved educational and income levels almost equal to the non-French. It was those French people in these low-income rural areas who had retained more of the old traditions, (as evidenced by learning only the French language in childhood) who had very low levels of education and income. The French were favorably disposed to programs which would improve local economic opportunities, but under current

conditions development work in much of South Louisiana will best be promoted by French-speaking persons familiar with the background of the area and the customs and traditions of its people.

A study was designed cooperatively by the FE and ESA Divisions to explore the economic adjustment problems of the Papago Indians in Arizona and to evaluate their adjustment potentials in agricultural and nonagricultural activities. This report is now being published. The significant findings were reported previously.

Persons of Spanish-American ancestry are a significant proportion of the Nation's hired farm working force, and are especially important in the Southwestern and other areas. Two studies are being conducted to determine trends in the availability of Spanish-American workers for agriculture along with related labor force data and demographic characteristics of this group. The study in Michigan consists of two phases; the first phase deals with Spanish-Americans domiciled locally; the second phase with migrant Spanish-Americans doing seasonal work in the sugar beet harvest in Michigan. Both phases of the study are now being tabulated. The preliminary findings of the Texas study were presented at the meetings of the Rural Sociological Society in August 1962. Included among the findings were: (1) Spanish-American household heads are over-represented in occupations associated with lower socioeconomic status, (2) unemployment was greater among household heads born in Mexico, (3) agricultural work was important as the first full-time occupation of household heads but they tended to move into nonagricultural occupations later in life, and to encourage their boys and girls to enter nonfarm occupations, and (4) the study also showed considerable improvement in recent years in the level of living of the Spanish-American rural and urban families.

Results of research concerned with the adjustment of families in the low-income county of Watauga, North Carolina, indicate that better adjusted farm families showed high rates of adoption of farm practices and a willingness to make changes in farm organization and production. They also participated more often in community organizations and had more frequent contacts with the Extension Service than did other families. Seventy percent of the higher level-of-living and high-income families considered themselves to be well adjusted to the community and were satisfied with their financial position. Results of this study appear only in two progress reports, and no final report is yet available.

A comparison of the social and economic status of older persons in a low-income rural county of Kentucky with older persons in a metropolitan area has been completed. Among males 60 years of age and over, urban residents had higher annual incomes, owned more valuable property, and had higher level of living than did rural men. Two-thirds of these older persons were still engaged in employment, even though they felt that earning additional money was not the principal reason for their working.

E. Rural Level-of-Living Studies

1. Level-of-Living Measures. Results of the 1959 Census of Agriculture were used in the development of a new formula for the computation of farm operator level-of-living indexes for 1950 and 1959. The U. S. county average of 100

in 1959 compares with an average of 59 in 1950. In both years, counties in the West had the highest level-of-living indexes, counties in the South had the lowest. Indexes for regions, divisions, States, State Economic Areas, and counties or combinations of counties have been published for both 1959 and 1950.

2. Health. Results of restudies of six New York counties in 1957-58 showed that over an 8-year period there had been little change in the population ratio per physician. However, in all six counties there was an increased use of preventive health care services, and a substantial increase in the proportion of families covered by health insurance.

Studies of the availability and utilization of health care facilities in three Georgia counties showed that in each county a higher proportion of whites than nonwhites reported having a family doctor. From two-fifths to three-fifths of all individuals reported coverage of some form of voluntary health insurance. In each county, farmers and farm laborers ranked lowest of all occupational groups in the proportion covered by health insurance.

In conjunction with the 1961 White House Conference on Aging, a special report was prepared on the medical expenditures of older farm-operator families in 1955. Results showed that per person medical expenses of older farm families averaged 56 percent higher than those of younger families. Older families with no medical insurance reported the highest expenses for both hospital and surgical care. The percent of consumption expenditures spent by farm families for medical care rose from 4.5 percent in 1935 to 8.3 percent in 1955.

To provide an up-to-date list of references on rural health, a bibliography containing 249 items, organized under broad headings, was prepared. References dealt with studies of trends affecting the need for rural health services, the health status of the rural population, utilization of health services, financing of health care, knowledge of health services, community health programs, and health problems of special population groups.

A survey of 105 rural towns in Connecticut provided an inventory of available health care resources as of 1960. Between 1950 and 1960, the increase in the number of physicians and dentists was less than the increase in population. Related surveys of a hospital service area showed that the proportion of the population actually carrying out preventive health care practices was considerably below the proportion reporting the desirability of such practices.

3. Education. A 10-year follow-up study of 2,800 youths, who were sophomores in rural Pennsylvania High Schools during the 1946-47 academic year showed that by 1957 only 15 percent of students from farm-operator families attended college, compared with over 30 percent of students whose fathers were employed in white-collar jobs. About 1 out of every 6 young people who had failed to complete high school had I.Q.'s of 105 and over, and had the intellectual ability to complete high school but failed to do so. Results showed also that in a highly urbanized State, such as Pennsylvania, factors such as occupation, education, intelligence, and personality adjustment, which have been found to distinguish migrants from nonmigrants, were

not as important as in other less industrialized areas. The only factor significantly associated with migration was the fact that a larger proportion of married than unmarried persons had migrated.

Results of a study of school attendance and educational attainment in two counties in Louisiana showed that favorable attitudes of parents of the high school students was an important factor in encouraging students to complete their secondary education. Those students who dropped out of school were most often from farm rather than nonfarm families, and from farm-laborer rather than farm-operator families.

A follow-up study of young males enrolled in the eighth grade of schools in Eastern Kentucky in 1950 shows that by 1960 half of all these young men had left their home counties to take jobs outside of Eastern Kentucky. Those who had migrated from the area were in a better economic position, as indicated by income and level of living, than those who had remained. A major reason for leaving the area was to take advantage of the wider range of employment opportunities available in nearby urban areas.

A study of the educational and occupational plans of high school seniors in three Central Utah Counties, and the extent of realization of these plans, showed that half of all high school graduates planned to attend college the following year. Those who planned to attend college generally desired some type of white-collar jobs (and fewer than 5 percent who planned to attend wanted to specialize in agriculture). The follow-up study indicated that only about 30 percent of the rural high school graduates actually enrolled in college -- a proportion much smaller than that characteristic of urban areas of the State. Most of the young persons not enrolled in school had left their county of residence by 1960, and most of them were employed in lower status jobs than those to which they had aspired when originally interviewed.

Also underway is research concerned with the occupational and educational plans of high school seniors in three rural counties in Florida. Information was obtained from the student himself, high school records, and interviews with the student's parents. Tabulations are now being planned and results will be available later.

Analysis of the experience of 2,200 students entering Iowa State University as Freshmen in 1955 showed that about 40 percent were from rural areas. Although proportionately more rural than urban students entered college with academic deficiencies, rural students were able to progress normally in college. Male students from rural areas most often enrolled in agriculture or engineering; females, in Home Economics.

Two studies conducted in conjunction with a nation-wide current population survey in October 1959 concerned the educational and occupational plans of high school seniors. In October 1959, roughly half of all urban high school seniors, but only about a third of rural-farm high school seniors planned to attend college the following year. The most important reason given by those not planning to attend was "lack of finances". Results of a follow-up study on these high school graduates showed that a substantially lower proportion

from farm-operator than from white-collar families attended college. Among the factors most important in influencing college attendance were the determination to do so (as evidenced by the actual plans the student had made about a year prior to entering college) and the type of high school curriculum (college preparatory or other) in which he was enrolled.

PUBLICATIONS REPORTING RESULTS OF USDA AND COOPERATIVE RESEARCH

Farm Population Changes, Trends, and Migration Patterns

- Bauder, W. W., and Burchinal, L. G. 1961. Occupational achievement of rural to urban migrant males in comparison with two urban control groups. (Paper presented at meeting of Amer. Sociol. Assoc., St. Louis, Mo.) 17 pp.
- Beale, C. L. 1961. Implications of the recent censuses for professional agricultural workers. (Paper presented at meeting of Prof. Agr. Workers, Tuskegee Inst., Tuskegee, Ala.) 20 pp.
- Beale, C. L. 1962. The causes of population growth in rapidly growing rural counties. (Paper presented at meeting of Rur. Sociol. Soc., Washington, D. C.) 12 pp.
- Beale, C. L., and Bogue, D. J. 1962. Recent U. S. population trends and their causes. (Paper presented at meeting of American Country Life Assoc., Washington, D. C.) 45 pp.
- Beale, C. L., and Bowles, G. K. 1961. The 1960 definition of farm residence and its marked effects on farm population data. Proc. Assoc. of Southern Agr. Workers, Vol. I. 10 pp.
- Beale, C. L., and Shoemaker, K. G. 1961. Adjustments in rural human resources. Adjustments in Agriculture - a National Basebook, pp. 260-284. Iowa State Univ. Press.
- Bogue, D. J., and Beale, C. L. 1961. Economic areas of the United States: A comprehensive statistical and descriptive analysis of socio-economic characteristics. Free Press of Glencoe, 1,348 pp.
- Bowles, G. K. 1960. Some previews of population changes in low-income farming areas. (Paper presented at meeting of Annual Agr. Outlook Conf., Washington, D. C.) 14 pp.
- Bowles, G. K. 1961. Net migration from the farm population, 1950-60. (Paper presented at meeting of Pop. Assoc. of America, New York, N. Y.) 18 pp.
- Bowles, G. K. 1961. Plans for net migration analyses for the 1950-60 decade. The Farmer and Migration in the United States, pp. 36-38. N. C. State Coll.
- Bowles, G. K. 1962. Adjustment processes associated with migration. With special reference to population redistribution in the Great Plains between 1950 and 1960. (Paper presented at meeting of Great Plains Agr. Council, Fort Collins, Colo.) 31 pp.
- Bowles, G. K. 1962. Some research possibilities utilizing data from the censuses of population and agriculture simultaneously. Population Research and Administrative Planning, pp. 28-38. Miss. State Univ. Conf. Series 10.
- Bowles, G. K. 1962. West Virginia's population profiles - some implications for the future. (Paper presented at W. Va. Univ., Morgantown, W. Va.) 17 pp.
- Brown, C. H., and Buck, R. C. 1961. Factors associated with the migrant status of young adult males from rural Pennsylvania. Pa. Agr. Expt. Sta. Bul. 676, 34 pp.

- Ducock, L. J. 1961. The migrant population of a metropolitan area in a developing country: A preliminary report on a case study of San Salvador. (Paper presented at meeting of International Pop. Conf., New York, N.Y.) 8 pp.
- Ducock, L. J., and Bowles, G. K. 1960. Tasas de reemplazo de la mano de obra disponible en los países centroamericanos, 1950-60, Estadística 18 (68), pp. 475-499. (Labor supply replacement ratios in Central American countries, 1950-60.)
- U. S. Dept. Agr., Economic Research Service. 1962. Farm population... Revised estimates for 1941-59. ERS-90, 4 pp.
- U. S. Dept. Commerce, Bureau of the Census, and U. S. Dept. Agr., Agricultural Marketing Service. 1961. Effect of definition changes on size and composition of the rural-farm population. Farm Population. Series Census-AMS P-27, No. 28, 19 pp.
- U. S. Dept. Commerce, Bureau of the Census, and U. S. Dept. of Agr., Agricultural Marketing Service. 1961. Estimates of the rural-farm population of the United States, April 1960. Farm Population. Series Census-AMS P-27, No. 29, 8 pp.
- U. S. Dept. Commerce, Bureau of the Census, and U. S. Dept. Agr., Economic Research Service. 1962. Estimates of the farm population of the United States, April 1961. Farm Population. Series Census-ERS P-27, No. 31, 6 pp.

Farm and Rural Manpower Analysis

- Cowhig, J. D. 1962. Education and earnings of the hired farm working force of 1960. Agr. Info. Bul. 262, 29 pp.
- Cowhig, J. D. 1962. Employment prospects in agriculture. The American Child, 44 (1), pp. 1-4. National Committee on Employment of Youth.
- Friend, R. E., and Stansberry, R. R. Jr. 1962. The hired farm working force of 1960. Agr. Info. Bul. 266, 55 pp.
- Maitland, S. T., and Ducock, L. J. 1961. The farm labor force: Recent trends and future prospects. J. Farm Econ. 43 (5), pp. 1183-1189.
- Maitland, S. T., Stansberry, R. R. Jr., and Friend, R. E. 1961. The hired farm working force of 1959. Agr. Info. Bul. 238, 53 pp.
- Stansberry, R. R. Jr. 1962. The changing pattern in hired farm labor. Agr. Sit. 46 (1), p. 7.
- U. S. Dept. Agr., Economic Research Service. 1961. Advanced report: The hired farm working force of 1960. 2 pp.
- U. S. Dept. Agr., Economic Research Service. 1962. Advanced report: The hired farm working force of 1961. 2 pp.

Impact of Social Security Program on Farm People

- Bauder, W. W., Duncan, O. D., and Tarver, J. D. 1962. The social security and retirement program of Oklahoma farm operators and farm landlords. Okla. Agr. Expt. Sta. Bul. B-592, 36 pp.
- Cowhig, J. D., and Maitland, S. T. 1960. The farmer and social security (Paper presented at meeting of Annual Agr. Outlook Conf., Washington, D. C.) 18 pp.
- Folkman, W. S., and Hamilton, C. H. 1961. Impact of the social security old age retirement system on agriculture and rural life in eastern North Carolina. N. C. Agr. Expt. Sta. Prog. Rpt. RS-40, 48 pp.

Population, Manpower, and Related Aspects of Rural Development

- Andrews, W. H., Bauder, W. W., and Rogers, E. M. 1960. Benchmarks for rural industrialization: A study of rural development in Monroe County, Ohio. Ohio Agr. Expt. Sta. Res. Bul. 870, 34 pp.
- Bertrand, A. L., and Osborne, H. W. 1960. Rural industrialization: A situational analysis. Rur. Sociol. 25 (4), pp. 387-393.
- Folkman, W. S. 1961. Rural problem areas need better schools. Agr. Econ. Res. 13 (4), pp. 122-130.
- Maitland, S. T., and Friend, R. E. 1961. Rural Industrialization: A summary of five studies. Agr. Info. Bul. 252, 37 pp.
- McCann, G. C. 1961. A study of farm families and their level-of-living income patterns in Watauga County, North Carolina. N. C. Agr. Expt. Sta. Rur. Sociol. Prog. Rpt. RS-39, 48 pp.
- Skrabanek, R. L., and Ducoff, L. J. 1962. Occupational patterns of Spanish-Americans in selected areas of Texas. (Paper presented at meeting of Rur. Sociol. Soc., Washington, D. C.) 17 pp.
- Youmans, E. G. 1961. Economic problems of older men. Ky. Farm and Home Sci. 7 (4), pp. 6-7.
- Youmans, E. G. 1961. Economic status and attitudes of older men in selected rural and urban areas of Kentucky. Ky. Agr. Expt. Sta. Prog. Rpt. 105, 43 pp.
- Youmans, E. G. 1961. Health problems of older persons in selected rural and urban areas of Kentucky. Ky. Agr. Expt. Sta. Prog. Rpt. 104, 53 pp.
- Youmans, E. G. 1962. Leisure-time activities of older persons in Kentucky studied. Ky. Farm and Home Sci. 8 (2), pp. 6-8.
- Youmans, E. G. 1962. Leisure-time activities of older persons in selected rural and urban areas of Kentucky. Ky. Agr. Expt. Sta. Prog. Rpt. 115, 42 pp.
- Youmans, E. G. 1962. Socioenvironmental factors in the health of older persons. Geriatrics, 17, pp. 442-450.

Rural Level of Living Analyses

- Buck, R. C., and Bible, B. L. 1961. Educational attainment among Pennsylvania rural youth. Pa. Agr. Expt. Sta. Bul. 686, 25 pp.
- Christiansen, J. R., Cowhig, J. D., and Payne, J. W. 1962. Educational and occupational aspirations of high school seniors in three central Utah counties. Brigham Young Univ. Social Sci. Bul. 1, 32 pp.
- Christiansen, J. R., Cowhig, J. D., and Payne, J. W. 1962. Educational and occupational progress of rural youth in Utah: A follow-up study. Brigham Young Univ. Social Sci. Bul. 2, 13 pp.
- Cowhig, J. D. 1961. Some comments on education and occupation of rural youth. (Paper presented at the meeting on the Status of Farm and Non-farm Rural Youth, Natl. Council on Agr. Life and Labor, Washington, D. C.) 5 pp.
- Cowhig, J. D. 1962. Early occupational status as related to education and residence. Rur. Sociol. 27 (1), pp. 18-27.
- Cowhig, J. D. 1962. Farm operator level-of-living indexes for counties of the United States, 1950 and 1959. Agr. Statis. Bul. 321, 64 pp.
- Cowhig, J. D. 1962. Less than a third of farm youth attended college. Agr. Sit. 46 (8), p. 6.

- Cowhig, J. D., and Nam, C. B. 1961. Educational status, college plans, and occupational status of farm and nonfarm youths: 1959. Farm Population. Series Census-ERS P-27, No. 30, 33 pp.
- Cowhig, J. D., and Stewart, E. O. 1960. The older farm family and medical costs. Agr. Info. Bul. 235, 40 pp.
- Folkman, W. S. 1962. Progress of rural and urban students entering Iowa State University. Agr. Econ. Rpt. 12, 28 pp.
- Hay, D. G., and McKain, W. C. Jr. 1961. Availability of selected health care resources in rural areas of Connecticut. Conn. Agr. Expt. Sta. Bul. 367, 38 pp.
- Hay, D. G., and McKain, W. C. Jr. 1962. Health care practices in rural Connecticut. Storrs. Agr. Expt. Sta. Prog. Rpt. 49, 14 pp.
- Manny, E. S., Yanniello, W. G., and Johnston, H. L. 1961. Rural health: Selected annotated references, January 1953-June 1960. Misc. Publ. 860, 39 pp.
- Nam, C. B., and Cowhig, J. D. 1962. Factors related to college attendance of farm and nonfarm high school graduates: 1960. Farm Population. Series Census-ERS P-27, No. 32, 18 pp.

Line Project Check List -- Reporting Year October 1, 1960 to September 30, 1962

Work & Line Project Number	Work and Line Project Titles	Work Locations During Past Year	Line Proj. Incl. in	
			Summary of Progress	Area & Sub- Subheading
ESA 1	Current Outlook and Situation Analysis for Agricultural Commodities	Washington, D.C.		
ESA 1-1	Livestock and meat	Washington, D.C. & Denver, Colo.	Yes	1-A
ESA 1-2	Fats, oils and oilseeds	Washington, D.C.	Yes	1-B
ESA 1-3	Milk and manufactured dairy products	Washington, D.C.	Yes	1-C
ESA 1-4	Poultry and eggs	Washington, D.C.	Yes	1-D
ESA 1-5	Food Grains	Washington, D.C.	Yes	1-F-1,2,3
ESA 1-6	Feed grains and other feeds	Washington, D.C.	Yes	1-E
ESA 1-7	Fruits and tree nuts	Washington, D.C.	Yes	1-C-1,2,3
ESA 1-8	Vegetables	Washington, D.C.	Yes	1-H-1,2
ESA 1-9	Sugar and allied sweeteners*	Washington, D.C.	No	
ESA 1-10	Cotton and synthetic fibers	Washington, D.C.	Yes	1-I
ESA 1-11	Animal fibers	Washington, D.C.	Yes	1-J
ESA 1-12	Tobacco and tobacco products	Washington, D.C.	Yes	1-K
ESA 2	Price, Supply, and Utilization Analysis for Farm Products	Washington, D.C.		
ESA 2-1	Development, consultation and service work	Washington, D.C.	Yes	2-G
ESA 2-2	State and geographic price differentials**	Washington, D.C.	No	
ESA 2-3	Effects of technological changes on tobacco	Washington, D.C.	Yes	2-F
ESA 2-4	Supply and price of hogs	Washington, D.C.	Yes	2-A
ESA 2-5	Price, demand and utilization of fruits	Washington, D.C.	Yes	2-D-1,2
ESA 2-6	Consumption of textile fibers	Washington, D.C.	Yes	2-C
ESA 2-7	Price and utilization of cotton	Washington, D.C.	Yes	2-C
ESA 2-8	Price and supply of beef cattle	Washington, D.C.	Yes	2-A
ESA 2-9	Price and consumption of meat	Washington, D.C.	Yes	2-A
ESA 2-10	Price, supply and utilization of vegetables	Washington, D.C.	Yes	2-E
ESA 2-11	Price, supply and consumption of poultry***	Washington, D.C.	No	
ESA 2-12	Factors that affect the feed-livestock economy	Washington, D.C.	Yes	2-A,B
ESA 2-13	Supply, price and utilization of tobacco	Washington, D.C.	Yes	2-F

*Discontinued during reporting year.

**Some work of this type reported under other line projects.

***No work done during current reporting period.

Line Project Check List -- Reporting Period October 1, 1960 to September 30, 1962 (Cont'd)

Work & Line Project Number	Work and Line Project Titles	Work Locations During Past Year	Line Proj. Incl. in	
			Summary of Progress	Area & Sub- Subheading
ESA 3	Measurement and analysis of farm income and expenditures	Washington, D.C.		
ESA 3-1	Current estimates of cash receipts, gross and net farm income, and related series	Washington, D.C.	Yes	3-A
ESA 4	Research and methods relating to farm income estimates	Washington, D.C.		
ESA 4-1	Research and methods relating to farm income estimates	Washington, D.C.	Yes	3-B-1,2,3,4
ESA 4-2	Quantitative relationships between agriculture and other sectors of the economy	Washington, D.C.	Yes	3-C-1,2,3, 4,5,6
ESA 5	Statistical data services	Washington, D.C.		
ESA 5-1	Statistical services which includes the centralization, maintenance, and analysis of basic economic data relating to agriculture	Washington, D.C.	Yes	3-D
ESA 6	Income and demand analysis as applied to agriculture and the agricultural outlook	Washington, D.C.		
ESA 7	Long-run agricultural projections, analysis and research	Washington, D.C.		
ESA 8	Measurement and analysis of supplies and consumption of food and other agricultural products	Washington, D.C.		
ESA 8-1	Outlook analysis and current estimation of supplies and consumption of food and other products originating in agriculture	Washington, D.C.	Yes	4-C
ESA 8-2	Development and use of master index of supply-utilization of farm commodities	Washington, D.C.	Yes	4-C
ESA 8-3	Analysis of effects of changes in the structure of the U.S. economy on the demand for food	Washington, D.C.	Yes	4-C
ESA 8-4	Measurement and economic analysis of wastes and losses of food in marketing	Washington, D.C.	No	4-C
ESA 9	Agricultural history	Washington, D.C.		
ESA 9-1	Service work on the history of agriculture	Washington, D.C.	Yes	5-A
ESA 9-2	Documentation of Department policies, organization and administration	Washington, D.C.	Yes	5-B
ESA 9-3	History of production and adjustment plans and programs	Washington, D.C.	Yes	5-B

Line Project Check List -- Reporting Period October 1, 1960 to September 30, 1962 (Cont'd)

Work & Line Project Number	Work and Line Project Titles	Work Locations During Past Year	Line Proj. Incl. in	
			Summary of Progress	Area & Sub-heading
ESA 10-1	Estimates and analyses of size, composition, and changes in current and future farm population, and service work in population statistics.	Washington, D.C.	Yes	6-A-1
ESA 10-2	Current estimates and analyses of migration of the farm and rural population.	Oklahoma		
ESA 10-3	Population, agricultural, and economic factors relating to migration in the North Central Region.	Washington, D.C.	Yes	6-A-2
ESA 10-4	The effects of urban-industrial expansion on Northeastern agriculture.	North Central States	Yes	6-A-1
ESA 10-5	Intentions and influences on decisions to migrate of high school seniors in low-income areas of Michigan.	Northeastern States	Yes	6-A-1
ESA 10-6	The impact of population change and migration on rural life in a Great Plains County (Sedgwick, Colorado).	Michigan	Yes	6-A-2
ESA 10-7	Characteristics of the French and Non-French rural populations in Louisiana, with special reference to factors relevant to rural development.	Colorado	Yes	6-A-2
ESA 10-8	Adjustment of rural migrant families in metropolitan areas (Iowa).	Louisiana		
ESA 10-9	Adjustment of rural migrants in Wilmington, Delaware	Washington, D.C.	Yes	6-D-2
ESA 10-10	Migration of farm people in Iowa during the 1950-60 decade.	Iowa	Yes	6-A-2
ESA 10-11	Analysis of population changes in Southern towns and cities, with special reference to changes in farm trade and service centers.	Delaware	Yes	6-A-2
ESA 10-12	Analysis of potential replacement of population of working age, 1960-70 decade, rural and urban areas of the United States.	Iowa	Yes	6-A-2
FP 1-4*	Agricultural and population characteristics of economic areas and subregions of the United States.	Oklahoma		
FP 1-10*	Effects of weather conditions on population changes in selected rural areas in Texas.	Washington, D.C.	Yes	6-A-1
ESA 11-1	Farm manpower analysis.	Michigan		
ESA 11-2	Analysis of the extent and character of participation of farm youth in higher education.	Washington, D.C.	Yes	6-A-1
ESA 11-3	Rural population and manpower adjustments associated with rapid suburbanization in rural areas.	Washington, D.C.	Yes	6-A-1
ESA 11-4	A study of Spanish-American workers in Texas and their changing role in agriculture.	Washington, D.C.	Yes	6-A-3
ESA 11-5	A study of Spanish-American workers in Michigan and their changing role in agriculture.	Chicago, Ill.	Yes	6-A-1
ESA 11-6	Concepts of retirement, attitudes toward retirement, and retirement plans of farmers.	Texas	Yes	6-A-1
ESA 11-7	Effects of industrialization on rural areas in Southeastern Ohio.	Washington, D.C.	Yes	6-B-1
FP 2-7*	Rural population adjustments associated with the establishment of new industries in Southeastern Ohio.	Washington, D.C.	Yes	6-E-3
FP 2-14*	Study of effects of industrial development on agricultural and urban sectors of an Iowa community.	Washington, D.C.	Yes	6-B-1
FP 2-17*	Analysis of the social and related economic effects of the Social Security program on North Carolina farmers.	Texas	Yes	6-D-2
FP 2-18*	Analysis of the social and related economic effects of the Social Security program on Minnesota farmers.	Michigan	Yes	6-D-2
FP 2-20*	Economic adjustment problems of Papago Indians in Arizona within and outside of agriculture.	Washington, D.C.	Yes	6-D-2
ESA 12-1	Development and maintenance of level-of-living indexes of farm families.	Iowa	Yes	6-C-2
		South Dakota	Yes	6-C-2
		Ohio	Yes	6-D-1
		Iowa	Yes	6-D-1
		Ohio	Yes	6-D-1
		Iowa	Yes	6-D-1
		North Carolina	Yes	6-C-1
		Minnesota	Yes	6-C-1
		Arizona		
		California		
		Washington, D.C.	Yes	6-D-2
		Washington, D.C.	Yes	6-E-1

* Discontinued.

Line Project Check List -- Reporting Period October 1, 1960 to September 30, 1962 (Cont'd.)

Work & Line Project Number	Work and Line Project Titles	Work Locations During Past Year	Line Proj. Incl. in	
			Summary of Progress	Area & Sub- heading
ESA 12-2	Study of youths in low-income rural areas who drop out of school before completing the 12th grade.	Kentucky	Yes	6-E-3
ESA 12-3	Availability of health care personnel and facilities and health practices in rural areas of Connecticut	Connecticut	Yes	6-E-3
ESA 12-4	Factors in educational plans and career aspirations of 12th grade students in selected low-income rural counties of Florida.	Florida	Yes	6-E-3
FP 3-6*	Personal, economic, and social effects of rural youth in Pennsylvania.	Pennsylvania	Yes	6-E-3
FP 3-10*	A study of changes in the availability and the use of health services and facilities in rural upstate New York.	Connecticut New York	Yes	6-E-2
FP 3-11*	Factors affecting school attendance and attainment among selected groups in rural areas of Louisiana.	Louisiana	Yes	6-E-3
FP 3-12*	Problems of older persons in selected low-income farming areas of Kentucky.	Kentucky	Yes	6-D-2
FP 3-13*	Personal and social factors related to the adjustment potential (in and out of agriculture) of families and individuals in low-income rural areas of North Carolina.	North Carolina	Yes	6-D-2
FP 3-14*	Availability and use of health care services and enrollment in voluntary health insurance of rural families in selected areas of the Southeast.	Connecticut Washington, D.C.	Yes	6-E-2
FP 3-15*	Availability and use of health care resources and enrollment in voluntary health insurance of older rural people.	Connecticut Washington, D.C.	Yes	6-E-2
FP 3-19*	A compilation of references dealing with rural health in the United States to include pertinent materials published between January 1953 and December 1959.	Washington, D.C.	Yes	6-E-3
FP 3-20*	Educational and occupational plans and achievement of rural youth in Sanpete County, Utah.	Utah	Yes	6-E-3

* Discontinued.



